Administration Report
of the
Forest Department, Madras
Presidency 1919-20 to 1922-23

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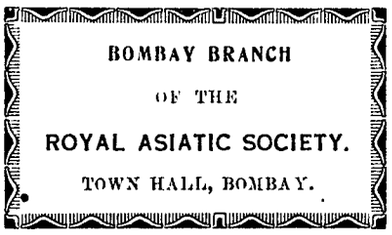

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ADMINISTRATION REPORT

OF THE

FOREST DEPARTMENT

OF THE

MADRAS PRESIDENCY

FOR THE

134090

TWELVE MONTHS ENDING 30TH JUNE 1920

1919-1920

MADRAS
PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRESS

1921

PRICE, 14 *annas*.]

BOMBAY BRANCH

OF THE

Royal Asiatic Society.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

FOREST YEAR ENDING 30TH JUNE 1920.

NORTHERN CIRCLE.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. ALTERATION IN AREA.

1. *Reserved forests and reserved lands.*—The transfer of 96·4 square miles of reserved lands to reserved forests and minor area rectification together left the total area of both classes of forests at 5,112 square miles as before, reserved forests increasing from 4,621 to 4,712 square miles and reserved lands decreasing from 491 to 400 square miles. *Northern Circle.*

2. FOREST SETTLEMENT.

2. 96·4 square miles were notified under section 16 of the Forest Act, while 396·9 square miles remained under settlement.

3. DEMARCATION.

3. Nineteen miles were demarcated. Two hundred and twenty-three miles were specially repaired at a cost of Rs. 1,249, while 4,445 miles were repaired, free of cost, by subordinates and panchayats. The total length of line demarcated at the close of the year was 5,817 miles, leaving 5 miles undone.

4. FOREST SURVEYS.

4. None were made by the Government of India. Local surveys of areas under working-plans were made in several districts according to needs. The reference maps were maintained except in *Ganjām*. The special reference maps made by the late Forest Map Officer have not yet been printed.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. REGULATION OF MANAGEMENT.

5. *Preparation and control of Working Plans.*—At the beginning of the year, of the total area of reserved forests, 4,621 square miles, 2,737 square miles were under Working Plans. At the close of the year, out of 4,712 square miles, 2,792 square miles were under working-plans. Of these plans, some in Kurnool district were in abeyance owing to personal and physical difficulties, notably that for the Gundlabrahmeswaram plateau. Several necessary revisions were made in existing plans in *Kistna*, *Vizagapatam* and *Kurnool* districts, while simple preliminary plans were made by the District Forest Officer, Mr. Raju Nayakar, and sanctioned in *Vizagapatam* for 55 square miles, his plan for 62 square miles in Palkonda range of the division being as yet unsanctioned. In *Ganjām*, the District Forest Officer, Mr. Minchin, on the advice of the Inspector-General of Forests, added the hill reserve sāl areas to his sāl working-plan. The working-plan was completed, but is held up owing to printing difficulties. The revision of existing plans provided for better grazing facilities and generally involved the substitution of the clear felling system for that of coppice with standards, owing to the latter having been proved unsuitable for the degraded forests comprised.

Mr. Minchin's sāl forest working-plan for the Ganjām forests is the only really important plan of those prepared, being a well thought out and elaborated scientific plan for valuable timber forests. The system is that of final clear felling with intermediate periodic improvement fellings. Mr. Minchin had the advantage

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of possessing good maps. The other new plans and most of the revisions were made without any maps worthy of the name. Before these crude plans can be further improved, it is necessary to have our reserves mapped, especially in view of the fact that sandalwood extensions, generally in otherwise untreated portions of the forests, now form an important prescription in many fuel working-plans. The supplemental working-plans for bamboos have been revised where necessary. In some cases, the rotation has been increased from 3 to 4 or 5 years, owing to the intensity of felling where there was a good market and, in consequence, the need for a longer rest.

2. Communications and buildings.

6. As regards roads, the year was one of consideration and reconnaissance rather than of execution. It was a lean budget cut down to actual necessities. No important roads were made. Altogether Rs. 7,644 were spent on the construction and completion of 44 miles of new roads, while 312 miles were repaired at a cost of Rs. 8,806. Rupees 3,900 were paid to the Local Fund Department towards maintenance. Several rather important projects in *Kurnool* and *Upper Gōdāvari* were agreed to. The existing roads were maintained in fair to good order.

7. *Buildings.*—Rupees 16,731 were spent on the construction and completion of new buildings. The construction of kacha buildings was strongly discouraged. Rupees 15,679 were spent on the maintenance of buildings. Thatched rest-houses good and bad were not always kept in good repair in *Ganjām*, *Vizagapatam* or *Upper Gōdāvari* districts. Elsewhere buildings were kept in good order.

3. Protection of Forests.

(*a*) *General protection.*

8. The following statement shows the number and classification of forest offences reported during the year as compared with those of the previous year and the average of the three years ending with 1918–19 :—

Cases.	Injury to forests by fire.		Unauthorized felling.		Unauthorized grazing.		Other offences.		Total.		Average for three years ending with 1918–19.
	1918–19.	1919–20.	1918–19.	1919–20.	1918–19.	1919–20.	1918–19.	1919–20.	1918–19.	1919–20	
Cases taken to court.	11	9	542	496	102	102	102	52	757	659	662
Cases compounded.	7	4	1,855	2,015	552	557	198	178	2,612	2,754	2,610
Cases undetected.	272	285	105	115	..	6	.2	4	379	410	373
Total ..	290	298	2,502	2,626	654	665	302	234	3,748	3,823	3,645

New cases of the year :—The total number of reported cases increased by 2 per cent over that of the previous year. It is to be observed that real forest cases are mixed up with cases occurring outside the reserves and dealt with by the Revenue Department, while the undetected cases are only those in which incendiarism is assumed and do not include thousands of other undetected cases, the detected cases in consequence giving no idea of the real state of affairs. Speaking generally, protection is deplorably bad throughout the three *Kurnool* divisions, bad in *Ganjām* and fair in *Kistna*, the *Gōdāvaris* and *Vizhgapatam*. Taking all classes of cases together, the increase in *Ganjam* and *Vizagapatam* for instance does not indicate any real increase. There is a reported decrease in the *Godavaris* and an increase in *Kurnool South* and *Kistna*, though there are reasons for believing that theft and other crimes were not so bad in *Kurnool South* as in the previous year. The increase in *Kurnool East* is probably due rather to the vigilance of the District Forest Officer than to any actual increase in crime.

If we take felling cases alone we get a slight increase, grazing cases being practically unchanged (665 instead of 654).

But, comparing the different districts, when we bear in mind the wholesale looting which goes on over the three *Kurnool* divisions and the southern and eastern parts of *Ganjam*, the conclusion that the number of reported offences in *Ganjam* bears

a much lower ratio and that in the *Kurnools*, a still much lower ratio to the real number of felling offences than it does in the other divisions is unavoidable, after inspections of these areas have been made. *Northern Circle.*

In *Kurnool West*, where no excuse for want of occupation existed owing to the opening of Mr. Whitehead's emergency coupes for employing all Chenchus, the ample provision of well-paid suitable labour merely gave the chenchus and their friends additional energy for committing wholesale robbery and murder, in addition to the usual petty pilfering. In *Ganjam*, Mr. Minchin met the situation caused by the famine by opening small coupes in suitable places where the people were allowed to help themselves free, thus removing all cause for complaint against the enforcement of the usual protective measures generally.

Cases old and new dealt with during the year.—The punishment inflicted by Magistrates is reported to be generally sufficient except in *Ganjām*, where persistent undue leniency was the rule There, however, steps have been taken to have this encouragement of pilfering stopped. In *Kurnool West*, the punishment in the case of cow and sheep trespass alone was not always deterrent.

In *Kurnool* district, we have a most adverse combination of disheartened and badly controlled subordinates coupled with defiant Chenchus and other lawless people living in or near the forests, who are in league with the ordinary villagers and, in some cases, with the subordinates themselves. No effective steps to remedy this state of affairs could be taken till after the close of the year. There were no cases of such importance as to be specially mentioned. The percentage of cases prosecuted rose from 24·6 to 26·5, cases compounded falling from 75·4 to 73·5. The percentage of acquittals in prosecuted cases was ten, i.e., the same as in the year before. The percentage of convictions is remarkably high when we consider the nature of the ordinary forest cases. The amount of compounding fees realized was Rs. 21,760 against Rs. 18,299 in the previous year.

During the year, the custom, prevailing in parts, of allowing a single subordinate to patrol alone and detect offences was put a stop to, partly with the object of giving the Magistrates a better chance of cross-examining the two or more witnesses and then giving deterrent punishment if the case was proved, and partly because the lower subordinates concoct many more false cases when they are allowed to patrol alone in this way.

9. Rewards aggregating Rs. 98 were granted to subordinates and informers.

(*b*) *Protection from fire.*

10. Form 72 does not show the total area of all the reserves. Out of about $3\frac{1}{2}$ million acres of forests, no protection is undertaken in areas covering nearly $\frac{1}{5}$ million acres, the unprotected area comprising nearly 24 per cent of the total. About half of this needs little or no protection, but very large fires occur in these forests in *Kurnool West* where no less than 129,399, acres out of 426,664 acres, were burnt. This area will be treated in future by the early burning method as will large areas classed under general protection in *Kurnool East* and under special protection in *Gōdāvari Upper*, both of which, to a large extent, should really now be classed as under no protection.

11. The feature of the year has been the introduction of the early burning system in *Kurnool West* and *East*. Altogether, about 177,509 acres were treated in this way and the results were very satisfactory, the acreage afterwards burnt by forest fires in these areas being negligible—only 428 acres. It was the first attempt made under exceptional difficulties and reflects great credit on both Mr. Whitehead and Mr. Stracey. It is only in the Nallamalais that this work has been attempted so far and it was not feasible to early-burn any of the areas opened to grazing this year or the closed Nallamalais of *Kurnool South*, a small portion of which will be early burnt next year.

This system, even in the first year, has proved valuable in preventing the further destruction of the valuable Kurnool Nallamalai teak plantations which have, for several years, been nearly burnt from end to end. It has been found that, by opening these areas to controlled grazing and afterwards conducting certain grass slashings and tramplings followed by early burning, even the most badly affected grassy plantations can be saved. These early burning operations of course do, in themselves, various degrees of damage to timber forests, while they are an insurance against total destruction. But in many of the areas treated, where grazing and

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sandalwood extension are of more importance than timber growing, the early burning itself actually does more immediate good than harm in stimulating the early growth of fresh grass just when it is most wanted, and in removing dense mats of short old useless grass which retard tree seed germination. The great majority of the reserves were really treated exactly as before, though Form No. 72 shows some cases of reclassification which was considered desirable especially in *Kurnool West*, where, 426,664 acres formerly classed as under general protection were, this year, rightly classed as under no protection. Three of the four divisions where, owing to the nature of the soil and tree growth, fires are comparatively small in extent, i.e., *Ganjām*, *Vizagapatam* and *Gōdāvari Lower*, show a large decrease in the area burnt, *Kistna* probably, from better reporting, as judged from 1919 inspections, showing a slight increase. The Kurnool divisions, where fires are always very bad, show a large increase due chiefly to better reporting, though, even this year, the areas are said to be underestimated. In *Kurnool South*, failure to ask the Conservator for sanction for the employment of patrols on a living wage entailed failure to obtain more than a fraction of the number sanctioned. What effect this may have had in contributing to the failure of the operations cannot be gauged. In several divisions, a feature of past years has been the employment of fire patrols at starvation rates. *Upper Gōdāvari* shows a great drop from over 100,000 acres to about 17,000. That there has been a large drop there is undoubted, but, there are reasons for believing fires in Lakkavaram range to be more numerous and of greater extent than reported. The actual improvement in the northern taluks is attributed, in great part, to the payment of rewards to women for successful fire protection. These women normally burnt the forest when they collect mohwa flowers. Mr. Abdul Hafiz took considerable pains to enlist their co-operation, and, this year, he remained in the forest in the fire season.

Taking the results on the whole, we have a smaller area burnt in the areas least subject to fire and a nominally larger area in the annually devastated areas, where at all events fires have been as bad as ever. The Kurnool Veligondas suffered as badly as did the Nallamalais. About 5 per cent of the Gundlabrahmeswaram Working Circle of the Nallamalais, which contains the best growth in *Kurnool West* and which after many years of successful protection, was so badly damaged in the previous year, being then burnt from end to end, was burnt this year. The early burnings round its flanks now reduce the danger of fire coming from without. The average cost of special and general fire protection was Rs. 10–7–8 per square mile attempted and that of early burning was Rs. 8–10–10 per square mile.

(*c*) *Protection from cattle.*

12. There is little to note. The number impounded fell from 25,145 to 23,395 being still somewhat higher than the abnormally low average for the last three years. The rates charged were the same as in the previous year except in *Kurnool* district and a few reserves in *Vizagapatam*, where there was an enhancement. The enhancement had little effect on the incidence, which, in *Kurnool* district, only fell from 1 cow unit for 4·3 acres in 1918–19 to 1 cow-unit for 5·6 acres this year; whereas, in the whole circle, it fell from 1 cow-unit for 5·9 acres to 1 cow-unit for 7·24 acres. The enhancement was, in *Kurnool*, for ordinary cattle from As. 3 to As 8 per cow. In *Vizagapatam*, the enhancement was from As. 4 to As. 8 per cow. In *Kurnool West* and *South*, deterrent punishment in goat cases accompanied by undue leniency in cow and sheep cases had excellent results in keeping out goats, but caused an increase in cow and sheep trespass. In *Ganjām*, the fact that famine conditions did not alter the paper results appreciably is due to tactful avoidance of extreme measures in hard cases. In other divisions, the various reasons adduced for fluctuations either have no meaning or are unconvincing.

There was a circle decrease in the area closed to grazing from 1,306 to 1,248 square miles, the area open increasing correspondingly, the latter now comprising 75·6 per cent of the forests. The total number of goats impounded fell from 6,136 to 2,413.

(*d*) *Protection against injuries from natural causes.*

13. Nothing was done except the clearing of 4 acres of prickly-pear in Veldurti reserve of *Kurnool West*. But, towards the end of the year, *Lantana* was discovered in different parts of *Ganjām* district and this will have to be eradicated at once under the Pests Act or it may do great damage.

4. Sylviculture.

(a) *Natural reproduction.*

14. This was normal in most places, but poor, where the rain failed, i.e., in *Kurnool East* and also in the *Kistna* coast areas where *Avicennia officinalis* in particular was affected. In the Napier's Park at Chatrapūr, *Ganjām*, *Pterocarpus* santalinus, an introduced species which produces a beautiful variety of *Red* saunders wood in these coastal areas, reproduced freely, the seedlings establishing themselves. It is hoped that, in the larger Weld reserve of *Kistna* and other similar places, this species will, eventually, be well established. Speaking generally, there is always an overabundance of natural germination, but, over larger areas it is useless being burnt back again and again to form at last stunted fire coppice. We see natural regeneration at its best in the grassless successfully fire protected sāl forests of *Ganjām*, where we have not yet induced by too long a period of perfect fire protection, the ousting of sāl by evergreens which has taken place in Orissa. *Northern Circle.*

In *Ganjām*, near *Russellkonda*, there is an interesting experiment to see the effect of aiding the natural reproduction of sāl by opening the area and treating the grass and litter in various ways. The results agree remarkably with those obtained in Upper India. There is a marked contrast between the poor and stunted reproduction on a strip from which the litter has not been removed and that on a litter cleared area, otherwise quite similar, close by.

(b) *Artificial reproduction.*

15. *Regular plantations.*—No additions were made.

16. *Cultural operations.*—Various small dibblings of *Cassia auriculata*, in the main unsuccessful, except in *Kurnool East*, were made in different divisions and other dibblings of no general interest. Sandalwood has been successfully established through the efforts of Mr. Abdul Hafiz in several reserves of the *Upper Gōdāvari* and Mr. McLaughlin, in the Kondapalli reserve of *Kistna*, has successfully maintained and extended the valuable sandalwood areas in the prickly-pear covered forests around the old hill fort. Messrs. Seager and Gaudoin have successfully introduced it into several dwarf evergreen areas in *Lower Gōdāvari*. On the Pecheruvu plateau of the *Kurnool West* Nallamalais, the operation has in places been overdone, so that the weeding out of superfluous seedlings is there needed. In this Circle, the difficulty of obtaining sufficient seed from unspiked areas is an impediment. There are in most divisions, extensive tracts available for Sandalwood sowing, dibbling and plantings. What has been done hitherto has been generally well done, thanks to the personal care and skill of the late Mr. A. W. Lushington. In a few years, we shall be able to obtain a fair amount of seeds from this Circle. In the Weld reserve, where Red Saunders is being substituted for blue-gum and casuarina, a good beginning has been made by Mr. McLaughlin. When more seedlings have been produced, operations on a scale worth recording will be started. In *Ganjām*, Mr. Minchin has started an experiment in using root and stem pruned transplants for filling in blanks. This system which has already been successfully tried in *The Nilgiris* has been employed for more than 20 years with great success in the Bombay Presidency, and it is hoped that it will be the means for producing successful *Taungyas* in the *Upper Gōdāvari* division and elsewhere where the severity of the hot season generally precludes direct sowings.

(c) *Operations for improvement of growing stock.*

17. In *Kurnool*, arrangements were made, but nothing yet actually done, for cutting back part of the badly burnt stock in the teak plantations. An uncertain amount of thinning and creeper cutting was done in the better plantations. In *Upper Gōdāvari*, Mr. Abdul Hafiz conducted 70 acres of thinnings in the Tunikicheruvu reserve in mixed teak forest. The extension of this work on a larger scale is urgently needed in these established teak forests—the result of Koya *taungyas*—in this division.

In *Ganjām*, extensive improvement fellings were undertaken under Mr. Minchin's new working plan. They are detailed under the next heading 'Exploitation.'

5. Exploitation.

(a) *System of management.*

(i) Major produce.

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18. The different sylvicultural systems in force were —

Clear or regeneration fellings.—These were carried out in *Ganjām*, over an area of 66 acres in the Plains Sāl Timber Working Circle according to the provisions of the new Working-plan. The regeneration of the area was effected satisfactorily by the method of cutting back, to ground level, the advance growth in the switch stage of development, which produced an even growth of fresh and healthy shoots. Though the financial result was poor, the subordinates learnt the work. Thirty-eight acres of casuarina plantation in *Gōdāvari Lower* and 446 acres of hill forests in *Kistna* were clear felled.

Selection fellings.—Trees of over the prescribed minimum girth were felled in the unreserved lands of *Gōdāvari Upper* which are under the management of the department. 67,465 cubic feet of logs were exploited as against 35,000 cubic feet in the previous year.

Improvement fellings.—These were executed in the Plains Sāl Timber Working Circle in *Ganjām*, the area exploited being 175 acres. The object of these fellings is to set free the crowns of promising Sāl trees, to expedite the growth of the trees thus reserved, to remove the intervening undesirable stems and to encourage the growth of seedlings, Sāl regeneration and coppice shoots. The state of the felled areas has been entirely satisfactory, the casualties among the reserved trees, on account of sudden exposure, being inappreciable and the Sāl advance growth and coppice shoots coming up in even dense mass.

Simple coppice and coppice with standards.—Under these systems were worked the fuel coupes in all districts except *Gōdāvari Upper*, the area cut over being 10 and 2 square miles respectively compared with 24 and 4 square miles in the previous year.

Unregulated fellings.—These were, as usual, confined to the Rampa forests in *Gōdāvari Lower* and to the unreserved lands.

(ii) Minor produce.

19. *Bamboos and miscellaneous produce.*—Three methods of extracting these were in vogue, viz., departmental collection, farming the right of collection and collection under permits. Departmental collection was resorted to for the cutting of bamboos and preparing splits in *Kurnool East* and *West*, and collecting miscellaneous produce in some of the forests of the former division, to provide labour for the Chenchus, and the right to purchase the outturn at fixed rates was leased out. Bamboos and other important products including tanning barks, elsewhere, were leased out to contractors. Permits were given for gravel, stone, manure leaves and earth for local consumption, and for extraction of all produce from the agency tracts in *Gōdāvari Lower* and from some of the forests which were not leased out in the *Upper* division.

An appreciable demand for seeds of nux-vomica having cropped up, it has been arranged to lease out separately the right of collecting them during the current year.

Fodder grass and hay.—Fodder grass in the coast forests of *Gōdāvari Lower* and *Kistna* was leased out. Permits were issued for cutting grass from the forest in *Kurnool East* and *West* on account of the scarcity of grass outside.

Free removal of grass was also allowed in *Kurnool* district owing to failure of monsoon.

The Military Department continued to make hay in *Kistna* and *Kurnool* districts, paying a royalty of Rs. 2 per ton. The quantity collected was 3,862 tons.

Grazing was regulated by issue of permits. The revenue realized during the year was Rs. 1,51,160.

(b) Agency of exploitation.

(i) DEPARTMENTAL AGENCY.

20. The outturn of major produce extracted by departmental agency is compared below with that of last year:— *Northern Circle.*

	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos.	Minor produce.
			Rs.	Rs.
1918-19	169	347	22,792	46,154
1919-20	216	779	18,819	7,506

The quantity of *major produce* exploited was 17 per cent of the total outturn, the chief works being the felling of timber in *Ganjām* for supply of sleepers and building materials, that of emergency coupes in *Kurnool East* and *West* to provide labour for the Chenchus, and selection fellings in the unreserved lands in *Gōdāvari Upper*.

There have been no changes of developments in the method of extraction and disposal during the year. Towards the end of the year, a beginning was made with the construction of a saw mill at Russellkonda. When this has been completed, larger quantities of sāl and other timber will be converted there and disposed of by special agency.

The departmental works referred to above and the supply of fuel to the Public Works Department in *Gōdāvari Upper*, accounted for the increased outturn of major produce.

The supply of *Anogeissus* bark and Sumac to the Military Department accounted for the large increase in the value of *minor produce* in the previous year, while there was no such supply during the year under report. The failure of crop, especially tamarind, in *Kurnool West* during the year contributed also to the decrease.

(ii) BY PURCHASERS.

21. *Major produce.*—The clear and improvement fellings referred to in paragraph 18 supra and the fellings in all fuel coupes, except the emergency coupes in *Kurnool East* and *West*, were carried out by contractors.

The quantity of *major produce* and the value of *minor produce* removed by purchasers during the year compare as follow with those of the previous year:—

	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos.	Grass and grazing.	Other minor produce.
			Rs.	Rs.	Rs.
1918-19	534	3,587	86,936	1,16,522	2,73,895
1919-20	665	3,707	1,15,253	1,55,075	2,85,856

The clear and improvement fellings in *Ganjām* and the sale, as fuel, of the top portions of trees resulting from these fellings and better growth in the fuel coupes of *Kistna* accounted for the increase under *major produce*. The increase in the value of *bamboos* was partly due to an increased demand for sugarcane props. The enhancement of fees in the *Kurnools* chiefly contributed to the increase under *grass and grazing*. The increase under *other produce* was chiefly due to better prices ruling for tanning barks.

(iii) & (iv) BY RIGHT HOLDERS AND UNDER PRIVILEGES AND FREE GRANTEES.

22. The quantity and value of forest produce removed under this head were as follow:—

	Timber in thousands of cubic feet.	Value.	Fuel in thousands of cubic feet.	Value.	Bamboos.	Grazing.	Other minor produce.	Total outturn.
		Rs.		Rs.	Rs.	Rs.	Rs.	Rs.
Right holders	48	1,624	254	5,122	524	1,289	23,321	31,880
Free grantees	42	2,422	7	140	519	12,966	324	16,371

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Rights.—They were enjoyed in *Ganjām* and *Kurnool West* under the concessions allowed at forest settlement. The estimated value of produce removed was Rupees 31,880 against Rs. 27,963 in the previous year.

Free grantees.—Such grants were made chiefly for rebuilding houses destroyed by fire. The estimated value of all grants was Rs. 16,371 against Rs. 17,608 in the previous year.

(*c*) *Outturn and sources of forest produce.*

23. The total outturn of *major produce* and the value of *minor produce* extracted from all classes of forests by all agencies during the year compare with similar details of last year as shown below :—

—	Timber in thousands of	Fuel in thousands of	Bamboos.	Gross value of minor produce including grass and grazing.
	C. FT.	C. FT.	RS.	RS.
1918–19	739	4,088	1,10,126	4,75,386
1919–20	971	4,847	1,35,115	4,86,337

The total number of cattle for which grazing was provided in the various classes of forests was 469,590 against 553,744 in the previous year.

CHAPTER III.—FINANCIAL RESULTS.

24. The following statement compares the revenue and expenditure of the year with those of the previous year and the averages of the preceding quinquennium :—

—	1919–20.	1918–19.	Average of the previous quinquennium.
	RS.	RS.	RS.
Revenue	9,41,695	6,95,155	7,76,316
Expenditure.			
Refunds	10,040	7,707	9,754
A. Conservancy and Works	2,53,566	2,50,831	2,69,229
B. Establishments	4,65,376	4,18,105	3,93,514
Total ..	7,28,982	6,76,643	6,72,497
Surplus ..	2,12,713	18,512	1,03,819

The marked feature of the year was that the gross revenue rose by 2·4 lakhs over that of the last year and by 1·6 lakhs over the average of the preceding five years. The surplus too exceeded that of last year by 1·9 lakhs and the average of the previous five years by one lakh, despite the increase of about half a lakh in expenditure. This satisfactory state of finance was chiefly due to better prices realized for tanning stuffs on account of the relief from pre-emption at fixed prices by the Military Deparment, but unfortunately was ephemeral. The export of raw hides and skins to foreign countries, the importation of wattle bark from Australia and South Africa and the unfavourable rate of exchange between India and England and America considerably depressed the prices for tanning stuffs during the year. As the result of the representation of contractors about the heavy loss incurred by them on account of the depressed condition, a rebate of 15 per cent of the total sale value in all cases of bark contracts for the year under report was sanctioned as relief. The other causes which contributed to the increase in revenue and to the important variations under the different heads are mentioned below.

Thirty-one per cent of the revenue was derived from *major produce*, 45 per cent from *minor produce*, 16 per cent from *grass* and *grazing* and 8 per cent from *other miscellaneous* sources. Of the expenditure, 18 per cent was incurred on the exploitation of forests 25 per cent on the upkeep and improvement and 57 per cent on miscellaneous items.

The revenue outstanding at the close of the year was Rs. 1,38,135 against Rs. 1,18,055 at its commencement; of the former, Rs. 45,829 fell due within the year. *Northern Circle.*

The estimated value of the produce in the sale depots at the end of the year was Rs. 6,755 against Rs. 25,775 at its beginning.

RECEIPTS.

(i) *By departmental agency.*

Timber.— +Rs. 43,352. Chiefly in *Ganjām* due to supply of sleepers to Messrs. Bird & Co., and in *Gōdāvari Upper* to sale of larger number of trees felled in unreserved lands.

		RS.	
Fuel	+	2,319	} Call for no special remarks.
Bamboos	—	1,984	

Minor produce.— —Rupees 19,057. Due to stoppage of departmental collection of miscellaneous produce in *Gōdāvari Upper* and to a poor crop of tamarind in *Kurnool West.*

(ii) *By Purchasers.*

Timber + Rs. 2,560—*Nil.*

Fuel.— +Rs. 8,467. Due chiefly to sale of larger area in *Gōdāvari Lower.*

Bamboos.— + Rs. 29,915. Due to increased demand for sugarcane props and to the sale of a greater extent in *Kurnool South.*

Grazing and fodder grass.— + Rs. 38,678. Due to enhancement of grazing fees in the Kurnools.

Minor produce.— + Rs. 1,30,855. The leases of tanning bark accounted for the cease as already mentioned.

(iii) *Miscellaneous (including confiscated drift and waif wood).*

+ Rs. 11,455. Due to the adjustment of the price of an elephant transferred to the Agency department in *Vizagapatam*, to the credit of the contribution made by the zamindar of Vallur for the construction of a road in *Kistna*, to levy of higher rates of compounding fees for offences of illicit felling and grazing in *Kurnool East* and to some erroneous credits which were rectified after the close of the year.

EXPENDITURE.

A. Conservancy and works.

+Rs. 2,735. Calls for no special explanation.

B. Establishments.

The increase which amounted to Rs. 47,271 was chiefly due to the revised scale of pay sanctioned for the Imperial service officers, to the introduction of the scheme of the reorganization of the subordinate establishments and to the grant of increased rate of special allowances to establishments.

CHAPTER IV.

RESEARCH AND EXPERIMENTS.

25. *Research.*—Nil.

26. *Experiments.*—(1) In the Chenchu emergency coupes of *Kurnool West*, the unsaleable refuse was burnt in heaps and teak seed dibbled in the ashes in suitable localities to see if we could establish mixed teak forest in this way.

(2) In *Ganjām*, Mr. Minchin was successful in establishing teak by the root and stem pruning method of transplanting in regeneration areas near Balinkia.

(3) It has been finally proved that it is hopeless to attempt to introduce sericulture in the *Butea frondosa* areas of Kurnool West with Chenchu labour.

(4) Timber seasoning experiments are in progress in *Ganjām* at Russellkonda, but the results are as yet uncertain.

(5) Vide paragraph 14.

CHAPTER V.—ADMINISTRATION.

27. *Tours.*—The Acting Conservator made extended tours in *Kurnool West* and the *Upper Gōdāvari* divisions, short tours in *Vizagapatam, Kurnool South, Ganjām* and *Kistna* districts and inspected one or two places in *Kurnool East* and *Lower*

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Gōdāvari. He also visited some of the Kanara and Belgaum forests of the Bombay Presidency and studied teak regeneration and Sawmill work there. The results are detailed in inspection notes except in the case of *Ganjām* where the acting Conservator went to learn, rather than to criticise.

Tour in Kurnool West.—This tour included conferences with the special Chenchu mission resulting in important steps being afterwards taken for the better control of the Chenchus who had gone from bad to worse. The chief forest matters investigated were—

(1) *Fire protection.*—This had been a hopeless failure in the greater part of the Nallamalais and even the teak plantations were being burnt year after year, some being hopelessly ruined. It was decided to introduce the early burning method. What was done has been stated in Chapter II, paragraph 11.

(2) *The Kurnool town fuel supply.*—Proposals to start a departmental supply with the aid of canal barges, were thrashed out and finally rejected as unfeasible, it being shown that Kurnool, like 101 places of more importance, had to take the inevitable consequences of its distance from the sources of supply.

(3) *The treatment of the better Terai forest.*—Nothing practicable could be suggested until the Chenchus were under better control, when probably the *taungya* system can be introduced.

(4) *The Gundlabrahmeswaram plateau.*—The sylvicultural requirements and difficulties were discussed, and suggestions made for teak propagation.

(5) Instructions were issued for the tending and fire protection of the teak plantations, and for sandalwood extension on the hills, and suggestions were made for the introduction of red sanders and the encouragement of *Terminalia chebula*—the myrabolam tree.

(6) Attention was drawn to the desirability of improving the water-supply by making use of a water diviner. The then District Forest officer, Mr. Whitehead, located several underground springs. It is unfortunate that he did not discover his powers earlier. It was realized that until the fourth Kurnool division was actually made, and the Chenchus had been brought under control, little could be done to develop these extensive and difficult forests.

(7) Details were worked out for the opening of the forests by new roads and for the better housing of the subordinates in more healthy sites.

Tour in Upper Gōdāvari division.—The suitability of the *taungya* system for the extension of teak was noted. Here, the local Koyas are in the habit of making their own *taungyas* and it should need little persuation to get them to work in reserves. One of the chief troubles hitherto has been that the division is too large for one District Forest officer. When it has been split, it will be possible not only to introduce teak into areas now devoid of that species, but to tend the large areas of mixed teak forest which are the result of Koya *taungyas* and in which the teak is being smothered for want of thinnings and improvement fellings. The unsuitability of the existing system of fire protection which, though occasionally successful, involves the burning of the whole area once every three or four years, resulted in sanction being obtained for the introduction of the early burning system. As a result of local inquiries, Dummugudem was selected as the headquarters of the new division to be formed in preference to Bhadrachalam. Several proposed new roads were finally approved. Suggestions for the treatment of the Koyas were made and better headquarters at less unhealthy places were arranged for the Range officers, Lakkavaram and Pulusumamidi.

Tour in Vizagapatam division.—The two most important reserves inspected were the Sinivaram and the Dharakonda which lie in the Agency tracts. They are very difficult to exploit on account of the deep valleys which preclude the construction of roads serving any considerable area. Proposals made, some three years back, to establish a settlement at Busilikota have hung fire. It is hoped that the District Forest officer will soon be successful in inducing its former inhabitants to return when valuable sandalwood and teak developments will become feasible in the fertile central plateau. In these reserves, fire protection appear to have more chance of success than elsewhere.

Tour in Ganjām division.—Several of the more important Sāl bearing areas were inspected. Coupe work was in progress under the provisions of the new working plan. The Vernacular training school which received an excellent training was inspected.

Tour in Kistna division.—The Kondapalli and Weld reserves were inspected. As a result, it was decided not to abandon the Weld reserve, but to try plantations of red sanders there. In Kondapalli reserve, the valuable sandalwood sowings and plantings are being extended. They are most promising. The subordinates now spread the seed by cutting narrow lines through the dense prickly-pear and thence bombing the area with a number of seeds wrapped up in paper with a stone. *Northern Circle.*

Tour in Lower Gōdāvari division.—The most important area inspected was zamindari forest flanking the Rampa agency tract which, it is hoped, will soon be brought under conservancy. The acquisition of these outlying hills is most important as, under cover of extraction from them, the valuable Rampa forests behind can be easily looted, so that the conservancy of the latter will be difficult, unless they are acquired.

Tour in Kurnool South division.—The chief point noted was the very elaborate and expensive system of fire lines in Chelama range. Proposals are being made for a more economical system. In the Gundlakamma range, the unnecessarily large area assigned for military grass cutting with resulting fires has been reduced and the excluded area will be early burnt next year. Steps have been taken to improve communications in these parts so that timber may be more profitably extracted.

The Bombay tour.—Through the kindness of several of the Bombay officers in particular Mr. Dalley and Mr. Pipe, the Forest Engineer, it was possible to pay a flying visit to the Gund Plateau and to see several other teak plantations in the Kanara and the Belgaum divisions. Several important sylvicultural points were noted, in consequence, in a note appended to the *Upper Gōdāvari* inspection note with a view to the success of the future *taungya* operations there. Two valuable reports on the Bombay Saw-mills—one by Mr. Gibson, the other by Mr. Grey, Superintendent of North-West Railway Saw-mills—were obtained at the time.

28. *Office inspections.*—All the District Forest offices were inspected during the year and the results were satisfactory in all offices except *Kurnool East.*

29. *List of offices audited.*—The accounts of all the offices except *Kurnool South* were audited, the general results having been reported satisfactory.

30. *Vernacular Training School.*—This was a great success; both the instructors managed ably and the more intelligent of the students were successfully taught map-reading and some of the more simple and useful operations in surveying. One of the great difficulties we had to contend with in the past has been the necessity for the solitary Range officer to do everything of that sort himself. Twenty-nine subordinates of Government and one forester of Parlākimedi estate were trained.

Mr. V. M. Dodsworth, Divisional Forest Officer, Puri, Bihar and Orissa, inspected the Ganjām sāl forests with Mr. Minchin, and the Conservator, Bihar and Orissa, has since applied for permission to have ten of his men trained at this school.

31. *Health of the establishment including an account of the measures of sanitation and casualties.*—On 25th March 1920 Mr. A. W. Lushington, C.I.E., Conservator of Forests, retired, who had recently rejoined the service, died. Mr. Lushington's botanical work which was of unique value thus came to an end. His loss is too widely felt to need further comment here. The total number of deaths was 17 out of a total of about 1,600 officers and subordinates. The health of the establishment was normal. *Ganjām*, *Kurnool*, the *Upper Gōdāvari* and some of the agency portions of other divisions are notoriously unhealthy and it is not as yet possible to do very much in the way of improving matters. A step has been taken in Kurnool where several bungalows on bad sites are about to be removed to healthier spots. But the lower subordinates unlike the superior officers have necessarily to spend many nights together with malaria-infected people and in consequence it is next to impossible for them to avoid infection. Malaria is one disease that seriously affected the health of the forest staff, another is nostalgia. To remove the latter altogether five Range officers had their headquarters removed from hopeless places to where they could enjoy some sort of society—two in Upper Gōdāvari and three in Kurnool district.

CHAPTER VI.—GENERAL.

32. *Formation and management of Panchayats (to include forest village system).*—At the beginning of the year, there were 15 panchayats managing in all 14,421 acres of reserved forests and 786 of reserved lands. At the close of the year, there

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were 14 panchayats. Two new panchayats for 16,457 acres were added in *Kurnool* district and three panchayats for 2,180 acres were abolished in *Kistna* because after repeated warnings they proved themselves hopelessly bad. In 13 cases, the work was reported fair to good and in one case bad. The scope for the extension of forest panchayats in this circle is limited, in some cases by the factious nature of the people, in others by the necessity for systematic economical management to meet a large demand. Unfortunately those places, where the demand is purely local, are frequently the most factious.

The forest village system is in force nowhere in this circle nor does the writer of this report think it anywhere applicable.

33. *Measures for improving local supplies and facilities (includes water-supply, fuel, manure leaves, etc.)*—In *Kurnool West*, in addition to four new fuel-felling series, eight emergency Chenchu coupes, primarily conceived for the employment of the Chenchus, went a long way towards supplying the wants of the local population lying between *Kurnool South* and the Western Nallamalais. This supply tended to a small extent to the release of miscellaneous fuel supplies which were hitherto locally consumed for consumption in Kurnool town. Elsewhere, the forests were fully exploited and nothing more could be done either for want of forest or for lack of demand.

The supply of manure leaves is only of importance in Kurnool district where it is fully met and no complaints have been received in this connexion. No works were undertaken for the general improvement of the water supply.

34. *Timber Transit Rules.*—In *Kurnool West*, seven stations which had proved useless and to some extent vexatious were abolished. In this circle there are large areas, especially in *Kurnool*, where the timber is nearly all of small size and the surrounding country is such that it can all be carried by hand through the forest out of sight. In such cases checking stations are of no value and we depend simply on patrolling to put down theft.

35. *Jungle tribes.*—These are found in all districts except *Kistna*. In *Kurnool*, the Nallamalais are being ruined year after year by the Chenchus, a bastard, diseased, depraved and corrupted community, the offspring of an original Chenchu tribe, which for many years has interbred with the refuse of outside village population, especially women of the Boya and Woddar caste. Temptation offered them by influential villagers, coupled with professional assistance by the Korachas and other thieving castes, together with their power of retreating into the interior forests when pursued, and the fear of their poisoned arrows, has defeated all attempts based on persuasion and kindness to induce them to lead a steady life and work in harmony with the Forest Department. Misjudging patience and kindness for weakness, they have hitherto done exactly as they liked working when they chose and afterwards burning the forest, looting the shops established for their convenience and committing murder and dacoity, while, all the time, a certain number of them were engaged in stealing timber and other produce in collusion with the respectable villagers outside. Shortly after the close of the year special measures were taken with the object of putting a stop to this and the results will be shown in the next year's report. But there are exceptions. The three small gudems (hamlets) in *Kurnool South*, behaved well as usual and were rewarded, and the Sudem gudem of *Kurnool West* did so well at early burning that they were given a sumptuous feast. In strange contrast to the above, is the friendly co-operation shown at all works by the truthful and reliable *Koyas* and *Reddis* of the *Gōdāvari* district whose one great fault is their drunkenness in the mohwa season which causes numerous forest fires. Some of the measures desirable in order to protect and encourage these people have been noted in the inspection note on the *Upper Gōdāvari* forests. *Vizagapatam.*—It is regrettable that better attempts were not made to carry out the suggestions made by Mr. Latham some three years back for forming a settlement at Busilikota in Sinivaram reserve by inducing the *Bhagatas*, who were turned out at forest settlement, to return on free forest lease. It is upon the degree of control, which the District Forest officer exerts over his subordinates, that the feasibility of attracting and utilizing the hill tribes depends. No real development can take place in the agency until the lower subordinate staff is almost entirely recruited from the hill tribes. At present, they do good fire line work for a few months of the year, but, having no authority, are all

preyed upon and necessarily corrupted in consequence by professional thieving *Malas* and others from the plains. *Ganjām.*—In Goomsur taluk, all Khonds, villagers, in or near the reserves, were given work on fire and general protection for which they received various presents and concessions. *Northern Circle.*

36. *Mining and quarrying.*—The only material quarried in appreciable amount is barytes, 252 tons of which were extracted altogether from the Betamcherla and North Dhone reserves and Kolumalapalli and Dhone unreserved lands in *Kurnool West.*

37. *Livestock*—(*a*) *Elephants.*—At the beginning of the year there were two elephants used by the District Forest Officer in each of the Ganjām, Upper Gōdāvari and Kurnool West divisions. Those in Kurnool and Upper Gōdāvari lead a happy life being carefully fed and kindly treated by the District Forest Officers. But in spite of every care in Ganjām, the long hot weather there coupled with the fact that the two elephants were bad from the very beginning and ought never to have been sent to Ganjām at all, rendered both these animals miserable and next to useless and they were accordingly sent off to the Nilgiris. It has been proved in Kurnool West and the Upper Gōdāvari divisions that it is most advantageous to give elephants boiled grain instead of raw.

(*b*) *Other animals.*—Out of 24 bullocks and buffaloes used for Chenchu cultivation and other purposes at the beginning of the year, eight died, six were given as rewards to Khonds and nine were purchased, there being thus nineteen at the close of the year.

38. *Veterinary establishment.*—Nil.

39. *Civil suits.*—There were two civil suits; one was a driftwood appeal case which Government won, and the other, a boundary case of small importance, is still pending. Both occurred in Lower Gōdāvari division.

40. *Control of unreserved lands by the Forest Department.*—It is only in Upper Gōdāvari division that the Forest Department control the unreserved lands. There are special local rules for the different taluks. Those in Bhadrāchalam were revised during the year, to remove all grievances in the matter of extension of cultivation. Some three years back, Mr. Latham, the Conservator, placed a check on the too rapid cutting out of the local timber supply by the Forest Department for revenue purposes, by raising the minimum girth limit of the important species. This year the minimum girth was further raised and the rotation in the different felling series much lengthened, so as to put a stop to the denudation of these unreserves. With the increasing population and cultivation, most of the smaller trees will be cut out by the people and if the Forest Department cuts out all the middle-sized trees as well as the largest ones, the timber supply outside the reserves will be soon exhausted and then theft from the reserves will increase, while the country will be made as hideous as the plains of Lower Burmah.

C. M. HODGSON,
Acting Conservator of Forests, Northern Circle.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

FOREST YEAR ENDING 30TH JUNE 1920.

CENTRAL CIRCLE.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. ALTERATION IN AREA.

Reserved forests.— The area at the end of the year was 5,675 square miles against 5,714 at the beginning as detailed in Form No. 65. 1,209 acres were transferred from reserved lands, 25,748 acres disafforested, 22 acres excluded for the exercise of communal rights and 31 acres treated as enclosures within reserve. *Central Circle.*

2. *Reserved lands.*—49 acres were notified as reserved lands, and the initial notification under section 4 in respect of 207 acres was cancelled.

2. FOREST SETTLEMENT.

3. Seventeen blocks were finally settled. Twenty-five blocks were pending final settlement and six blocks undergoing settlement as detailed in Form No. 66 Total cost of settlement was Rs. 11,751.

3. DEMARCATION.

4. As shown in Form No. 67 about 100 miles of permanent demarcation of reserve boundaries was done during the year, the method being permanently cleared lines with stone cairns at intervals. The taluk boundary between Pulivendla of *Cuddapah* district and Kadiri of *Anantapur* district remains to be marked on the ground. It is probable that for the greater part of its length no cut line is necessary as the ridge of cliffs will serve as the boundary.

Coupes were as usual demarcated by cleared lines with cut stones at their corners bearing inscriptions. Attempts have in the past been made to demarcate and fence coupes closed to grazing by live fencing in trenches and on mounds. This has proved a failure as the mounds become damaged and the fencing is never continuous. Large differences have been discovered in Chittoor between the actual boundaries on the ground and the Section 16 Notifications and Maps and I propose to post a Special Duty Ranger as soon as practicable to go into the question.

4. FOREST SURVEYS.

5. No survey work was done by the Survey of India during the year. The boundary between Musureddipalli shrotriyem and Sancharla reserve forest in Porumamilla Range of *North Cuddapah* Division as settled in a civil suit long ago, was surveyed by a surveyor deputed by the Deputy Director of the Madras Survey. Survey of coupes, verification and rectification of boundaries, alignment of roads, bridle-paths, etc., and preparation of coupe, working plan and fire maps were as usual done by the departmental staff, and some of the old coupes which were wrongly surveyed by Rangers in *Bellary* District were resurveyed by the office draftsman. In *Guntūr*, a special duty Ranger surveyed parcelles Nos. 61 to 65 and 68 of Bollapalli Reserve and Guttikonda Block II for working plan purposes.

As a result of actual survey of the hill areas in the *Chingleput* District, many differences were discovered between the actual areas on the ground and those noted in the working-plan. The District Forest Officer is to submit a special report regarding this.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. Regulation of Management.

(a) *Preparation and Control of Regular Working Plans.*

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6. In *Anantapur* the prescriptions of the working-plan for Bukkapatnam Range were revised and approved of by the Chief Conservator. The revision of the working-plans for Gooty, Kalyandrug and Madakasira Ranges has been taken up. Some of the prescriptions of the old working-plans for these ranges were found impracticable. The new working-plans merely contain prescriptions for fire-protection, grazing and concentrated sandal dibbling on small areas.

In *Guntūr* a working-plan for some 12,000 acres of Bollapalli Reserve and Guttikonda Block II of Vinukonda Range was prepared by the District Forest Officer. The systems prescribed are improvement fellings for the better plains parts, coppice-with-standards for the less good plains parts, and rest for the hills. The species to be favoured are *Hardwickia binata*, *Anogeissus*, *Chloroxylon* and *Soymida*. The area covered by the working-plan is to be walled in with a view to prevent theft and grazing. It is hoped to put a stop to the pernicious lopping of *Hardwickia* trees so common in *Guntūr* forests. The tentative working-plan for Tadepalle Reserve was cancelled as the reserve was transferred to Class V and handed over to a panchayat.

A preliminary working-plan for the bamboo and fuel working circles of the Lankamalais of Vonipenta Range, *North Cuddapah* Division, was returned to the District Forest Officer for revision. Data for the preparation of a working-plan for the whole Division have been collected.

In *South Cuddapah* the preparation of revised working-plans for improvement felling and fuel working series in Kodur and Balapalli ranges was undertaken during the year, as parts of some of the existing series are too inaccessible to make their working feasible.

The submission of a reconnaissance report for 26,498 acres of the Palakondas in *West Cuddapah* is pending preparation of maps. A special duty ranger was engaged in selecting workable areas in Ganganapalli Range for working-plan purposes.

In *Nellore*, revised working-plans for the forests in Nellore and Kavali ranges, comprising an area of 153·30 square miles, are pending inspection of the forests by the Conservator. The working plan for Sriharikota is also under revision by the District Forest Officer. A tentative working-plan sanctioned by the Conservator for the Appasamudram Reserve was cancelled as it was found that fuel coupes could not be sold. A working scheme for the forests of Rapur Range, extending to 32·95 square miles, is being compiled with a view to meet the demands for fuel for engines in the mica mines.

In *Chittoor* the preparation of a working-plan for the Chandragiri Range and for the bamboo forests of the Mamundur Range was taken up during the year.

2. Communications and Buildings.

(a) *Road and Bridges.*

7. The total expenditure on new works amounted to Rs. 9,687 and on repairs to Rs. 11,349 as compared with Rs. 7,404 and Rs. 5,166, respectively, in the previous year.

In the *Cuddapah* divisions some 44 miles of roads and bridle-paths were constructed with a view to make the coupes of the Timber and Fuel Felling Series accessible to carts and to facilitate inspection and fire-protection.

In *Nellore*, the conversion of 12 miles of compartment and Kancha lines into bridle-paths in Kanigiri, Rapur and Udayagiri Ranges was done. The construction of two miles of cart track in Sathiavedu Range, *Chingleput* District, for transport of fuel from coupes was carried out. In *Chittoor* three-fourths of a mile of road in Kalroadpalle and one mile of the Nagapatla-Bhakarapet road were constructed.

The old famine roads in *Anantapur* District, viz., from Bukkapatnam to Siddarampuram ($7\frac{7}{8}$ miles) and from Bukkapatnam to Veerachennepalle ($4\frac{3}{4}$ miles) were handed over to the Taluk Board, Penukonda, for maintenance.

Tramways.—The laying of four miles of temporary tram-line for the transport of fuel from the coupes to the Buckingham canal over the sandy tracts of Sriharikota forests and the Coast casuarina plantations was done at a cost of Rs. 122. Tram-lines are essential as otherwise it would be almost impossible to transport fuel through the pure sand where these coupes are situated. Unfortunately it is very difficult to keep the lines in perfect working order as the cost of replacing worn-out sleepers, etc., is very high and, further, they are not easily obtainable. As a makeshift wooden sleepers made from *Pterospermum Suberifolium* fixed with dog spikes made locally from sheet iron are used to replace worn-out iron sleepers. *Central Circle.*

(*b*) *Buildings.*

8. During the year the total expenditure on new buildings and on repairs amounted to Rs. 28,114 and Rs. 15,881, respectively, as compared with Rs. 17,273 and Rs. 16,170 in the previous year. New Forest rest-houses were constructed at Thummalabylu, Bodeddulabhavi, and Salivendla in *South Cuddapah* and at Gadikota in *West Cuddapah*, while the Kangundi Zamindar's bungalow at Palmaner was purchased for Rs. 2,500, and will, after repairs, serve as a Forest Circuit House. The rest-house at Bodeddulabhavi, built at a cost of Rs. 945, was burnt down soon after completion by some malicious person. A new Range Office was built at Sriperumbudur in *Chingleput* District. Quarters for subordinates were built at Gadela, Desichettipalli and Polathula in *South Cuddapah*, at Sanipaya in *West Cuddapah* and at Parakalathippa in *Chittoor*.

3. Protection of Forests.

9. There were 8,900 cases against 8,662 in the previous year.

Out of 8,900 cases as many as 2,434 relate to *Guntūr* and this District probably tops the Presidency as regards forest offences. There has been a slight increase in the protective staff during the year in *Guntūr* and this has been accompanied by an increase in the number of forest offences. Protection from man and beast is the chief problem in this District. The District Forest Officer says "the ever-increasing number of forest offences makes one doubt whether our present methods should not be modified to achieve co-operation of the villagers or to make forest conservancy more popular; to declare an ever—increasing number of village ryots as forest criminals is apt to have a demoralising effect." I am inclined to take the view that we are in the transition stage and that when the Forest staff in *Guntūr* is sufficiently strong, when we have divided the reserves into those required permanently for timber and fuel supply and walled them in, into those required for grazing and introduced a grazing system and disafforested the reserves not required for the above purposes, forest offences will decrease and not increase. The lopping of *Hardwickia* for cattle fodder has, in the past, been the ruination of the *Guntūr* forests. On my recent tour I noticed that lopping had been in recent years largely put a stop to. Although the raising of the grazing fees in 1915–16 has had the effect of reducing the grazing incidence by about one half, the reserves of *Guntūr* uplands are still overgrazed by local and delta cattle. To remedy this I have proposed in my recent inspection note to further enhance the grazing fees and to give local cattle preference over those from a distance by charging higher rates for the latter. It is necessary that the incidence should be brought into line with the possibility before any grazing system can be successfully inaugurated.

The protection of the forests of Madanapalli Range, *Chittoor* District, leave much to be desired, which is very largely due to the unwieldy size of the range. In my recent inspection note I have proposed to divide the range into two, and, until this materialises, much improvement cannot be expected. Very extensive theft of timber and unwillingness to assist in extinguishing forest fires on the part of villagers in the Southern end of Chandragiri Range of *Chittoor* District was recently reported by the District Forest Officer. As it was shown that the forest subordinate staff was largely to blame and was insufficient, the staff has been strengthened and the villagers warned that unless matters improve the grazing fees will be raised. The grazing incidence is heavy in the *Chittoor* District reserves and with a view to decrease it higher grazing fees are to be charged from 1st July 1920. The Urukonda Reserve has been closed to grazing for two years from 1st July 1919 as a punishment for extensive thefts of timber.

Practically the whole District of *Nellore* is divided into kanchas and kanchadars are held responsible for the protection of forests entrusted to their charge.

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Rewards.—In *Guntūr* district a reward of Rs. 18 was granted to three forest guards and one reserve watcher for having detected a case of theft of green fuel in the face of keen opposition from the villagers. In *North Cuddapah* rewards amounting to Rs. 20 were granted for detection of a shooting case. In *South Cuddapah* a sum of Rs. 152 was sanctioned as rewards for the detection of two offences wherein 16 persons were convicted of theft of red sanders timber. In *West Cuddapah* rewards amounting to Rs. 35 were granted to subordinates for detecting organized thefts. In *Nellore* District Rs. 1,025-8-0 was spent on rewards to kanchadars in appreciation of their good work in protecting kanchas leased to them; two gold and nine silver medals were given to some kanchadars instead of money rewards. A sum of Rs. 125 was awarded to subordinates for detecting offences in Nellore Range in places where the thieves do not hesitate to attack subordinates. In *Chittoor* District rewards were granted to the extent of Rs. 741-8-0 in 36 cases for meritorious service rendered in detecting important cases, the majority of which related to illicit transport of sandalwood and browsing of goats. The grant of rewards, which has been instituted in this District on a fairly extensive scale during the year, is reported to have had a great effect in creating a better moral tone among the lower ranks.

Protection from Fire.

10. In the *Cuddapah* Divisions fire-protection is the great problem and we are far from having solved it. This year it has again failed. Systematic attempts were made to protect the forests by clearing and fire-tracing frontier lines and interior fire-lines and grubbing out all inflammable material around worked coupes; fire patrols were increased and notifications issued. But all these precautions were of no avail. The bulk of the forest was burnt, including several of the coupes recently felled over and under regeneration. Most of the fires are reported to have been set by graziers and grass-cutters, and coupes were maliciously set fire to. The fires fanned by high winds in tall grass forests are very difficult to extinguish even with the help of villagers. Seedlings and saplings are burnt down, crowns of poles badly affected, bark scorched and hollow trees, which served as seed-bearers, levelled to the ground. The forests consist very largely of that valuable species, red-sanders, the timber of which is practically all unsound as a result of fires in the past. It is obvious that the value of these forests will not increase until we have mastered fires and so are able te raise a healthy young stock. A conference to discuss the question, attended by Revenue, Forest and Agricultural officers and ryots, was held at Kodur in March last, but we are no nearer a solution. The Chief Conservator has recently called for fire-protection proposals to cover all three Forest Divisions of *Cuddapah*.

Protection against injuries from natural causes.

11. The first uprooting of lantana was done over an area of 100 acres on Horsley-konda in *Chittoor* District and a further area of 200 acres was taken up for first uprooting and a good deal of work done before 30th June 1920. Eradication must be done year after year on the same area until every seedling is got rid of. The lantana covered area on Horsleykonda is about 1,000 acres and the cost of getting rid of it will I reckon come to about Rs. 7,000. This is worth while as the lantana infested area is also the sandal covered area.

4. SYLVICULTURE.

12. Sandal on Horsleykonda continued to increase by seed from the older trees and all stages of seedlings and saplings are in abundance. There are also many seedlings of this species near parent trees in the many places it occurs in Palmaner Range, in the few places it occurs in Madanapalli and Chittoor Ranges of *Chittoor* District and in the Kodur Plantation of *South Cuddapah*. Seedlings of sandal also exist in the Penukonda, Amagondapaliam, Konduru, Gundamala and Yerracherla Reserves of *Anantapur* District near parent trees bearing seed, resulting from sowings some years back.

Attempts to raise sandal have been made by dibbling sandal seeds under bushes in selected suitable places. Success is reported in the following places:—*Guntur District*—Venkatayapalem Reserve where 500 seedlings are thriving; *South Cuddapah*—Coupe V of Thunukonda Fuel Working Circle, Ballapalli Range, where 41 seedlings are established; Papanasam, Kodur Range, where 41 seedlings are thriving; Rajampet Improvement Felling Series, Rajampet Range, where there are 40 seedlings; Coupe IV of Thummalabylu West Series where there are 50 seedlings;

Salivendla Reserve where there are 235 seedlings; *West Cuddapah*, Cuddapah Range, where there are 124 seedlings; *Chingleput*, Kambakkam Hills, 743 seedlings; *Chittoor*, Madhinikonda Reserve, results good but number not reported. *Central Circle.*

Our policy in raising sandal where none exists now and where conditions are suitable should, I think, be to try to stock small areas, which should be walled in. Such areas should be at considerable intervals, say about ½ mile or 1 mile from one another. They should, if possible, have some ever-green shrubs or trees on them so that the sandal seedlings may have some shade to help them tide through the first hot weather and also, if possible, be near a tank or well or water-course so that they may be given a little water in the first hot weather. The dibbling should be done under these ever-green shrubs and trees. If dibbling without walling or fencing is resorted to, I recommend that it should be along stream-banks, where there is usually some shade and where moisture is retained longer in the soil. The most promising localities for the spreadof sandal seem to be parts of *Chittoor*, *Anantapur* and *Bellary* Districts.

Recently I observed abundant established natural regeneration of the three principal species—*Hardwickia*, *Anogeissus* and *Chloroxylon* (satinwood)—in the reserves of Bukkapatnam Range, *Anantapur* District. Red Sanders reproduction by seed and coppice is reported to have been generally satisfactory throughout this species' zone, but as above indicated its becoming established is endangered and delayed by fires.

Sowing of red sanders in the blanks in Chittoor Reserve not having proved successful, planting was tried. Natural seedlings were dug up from parts of the reserve where they were thick. Some were put in baskets for a few months and then planted out and others were planted out without basketing. Among the former there have been few casualties and among the latter many.

5. Exploitation.

13. The total extent under Working Plans was 858 square miles and the various sylvicultural systems in force are shown below :—

Sylvicultural system.	Area in square miles.	Percentage of total area under each sylvicultural system.
1. Method of clear felling by compartment ...	4	0·47
2. Simple Coppice	4	0·47
3. Coppice with standards	130	15·15
4. Improvement fellings	292	34·03
5. Area closed to felling or worked under no definite sylvicultural system.	428	49·88
	858	100·00

Except in the casuarina plantations along Nellore coast and in Sriharikota, where a temporary tramway is employed, fuel and timber were extracted from the forests by cart-roads, minor produce is almost entirely removed on head-loads. Both major and minor forest produce were sold to contractors who did their own felling or collection and removal except in the case of Nux vomica, rattans, soapnut, tamarind, and sarasaparilla in Sriharikota whose collection is done departmentally by Yenadies and sold after weighment and storing. The sale of almost all produce was by public auction.

Grazing was allowed on permit except in the case of "closed areas" and in *Nellore* and parts of *Chingleput* where the kancha system is in force. In *Nellore* and *Chingleput* several kanchas were leased to panchayats. In future some kancha leases to panchayats will be for a term of from three to ten years, as a long lease should hold out greater inducement to the kanchadars to improve the grazing.

Grass was cut by Military contractors in certain reserves in *Bellary*, *Anantapur*, the *Cuddapahs* and *Chittoor*. The Military Department pays the Forest Department a seigniorage of Rs. 2 for every ton received. Such grass cutting assists natural regeneration of tree species and I especially noticed this in the case of Hardwickia in *Anantapur* District. Two reserves have been closed to Military grass contractors in *Anantapur* as there were strong reasons to suspect the contractors of firing them to obtain good grass. Complaints have also been received from *Cuddapah* that these

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contractors smuggle out timber with the grass and the matter is under correspondence with the Assistant Director, Military Grass Farms, Bangalore. No departmental hay-making was undertaken.

The free removal of grass was allowed to local people in all districts except *Chingleput* and such removal favours natural regeneration of tree species.

On account of enquiries from several quarters for Nux Vomica seed for the extraction of strychnine, this article has been leased separately from other kinds of minor produce in all districts, and it is hoped that it will bring in a large revenue when contractors have by actual collection ascertained the approximate annual yield, which is undoubtedly great.

The prices obtained for tangedu bark leases attained an unprecedented figure owing to Government control over prices being removed. Later the market price of this bark fell greatly owing to the withdrawal of the prohibition to export raw hides and to Australian and African Wattle bark being put on the Indian market. The tangedu contractors lost heavily and were granted a rebate of 15 per cent by the Chief Conservator. The prices obtained for the 1920–21 leases have accordingly dropped enormously.

The question of tapping more accessible reserves for supplying fuel to Madras and so reducing the price of firewood in Madras is engaging the attention of the Forest Utilization Officer. A good deal of fuel is brought to Madras from the *Nellore*, *Chittoor* and *Cuddapah* Forests. In the last district it is difficult to procure contractors to work all the coupes and we get very poor prices. The contractors are local and without much enterprise and they complain of scarcity of labour, and difficulty in extraction and procuring railway waggons.

CHAPTER III.—FINANCIAL RESULTS.

14. The subjoined statement compares the results of the year with those of the previous year and with the previous quinquennial average.

——	1919–20.	1918–19.	Average of the previous five years.
	Rs.	Rs.	Rs.
Revenue	14,24,151	10,81,869	10,42,004
EXPENDITURE.			
A.—Conservancy and Works (including refunds).	2,36,951	2,07,092	2,38,407
B.—Establishment	5,17,987	4,32,457	3,98,758
Total of A and B ..	7,54,938	6,39,549	6,37,165
Net surplus ..	6,69,213	4,42,320	4,04,839

There is a surplus of Rs. 6,69,213 against a surplus of Rs. 4,42,320 last year and a surplus of Rs. 4,04,839 for the quinquennial average.

(1) The increase in the surplus of Rs. 2,26,893 in the year over that of the previous year is due chiefly to very high prices obtained for tangedu bark leases in all districts and to a general increase under fuel and miscellaneous heads (fines and forfeitures).

(2) During the year, the revenue increased by Rs. 3,42,282 and the expenditure increased by Rs. 1,15,389.

(3) Of the receipts, 20 per cent was realised from major produce, 25 per cent from grass and grazing, 46 per cent from minor produce and 9 per cent from miscellaneous items.

(4) Of the expenditure, 1·60 per cent was directed towards exploitation, 34·49 per cent towards the upkeep and improvement of the forests, and the remaining 63·91 per cent chiefly represents expenditure on establishment. The outstanding revenue at the close of the year was Rs. 2,29,338, of which Rs. 20,785 fell due within the year. The estimated value of timber and other produce at sale depots at the close of the year was Rs. 5,375 against Rs. 10,719 at the beginning of the year.

RECEIPTS.

(i) *By Departmental Agency.*

The variations between the actuals of the year and those of the preceding year are given below:— *Central Circle.*

		Rs.
Timber	—	137
Fuel	+	6,233
Bamboos	—	9
Sandalwood	+	242
Minor Forest produce	—	21,165

The increase under fuel was in *Nellore* District and was realised from the sale of fuel left unremoved by a contractor which was collected and stacked by the Department. The decrease under minor forest produce was due to the fact that in the previous year there were adjustments to the credit of the department by the Military Department for hay while there was no such adjustment during the year.

(ii) *By Purchasers.*

		Rs.
Timber	—	11,441
Fuel	+	46,449
Bamboos	—	7,854
Grass and grazing	+	5,673
Minor forest produce	+	2,96,304

Timber.—(— Rs. 11,441).—This is a fluctuating item, the chief source being the value of trees on lands assigned on dharkast. The decrease is also due, in part, to want of demand and low prices got for the timber coupes of the three *Cuddapah* Divisions.

Fuel.—(+ Rs. 46,449).—The increase is due to sale of casuarina in Moka Plantation and of dead wood in Daroji Tank Bed in *Bellary* District, to a better yield from the coupes of *North Cuddapah* and to a larger area being exploited in *Nellore*.

Bamboos.—(— Rs. 7,854).—The bamboo coupes of 1919–20 in *Chittoor* District were poorer than those of the previous year and consequently prices dropped.

Grazing (+ Rs. 5,673).—The increase is due to several closed areas being thrown open to grazing in *Anantapur* on account of scarcity of cattle fodder, and to higher rates charged for grazing foreign cattle in the three *Cuddapahs*.

Minor Forest Produce (+ Rs. 2,96,304).—The increase resulted from abnormal prices obtained for Tangedu bark leases.

(iii) *Miscellaneous (including confiscated drift and waifwood).*

+ Rs. 27,987.—The increase was mostly from compounding fees levied in Forest offences, and from fines inflicted on contractors for bad work.

EXPENDITURE.

A. Conservancy and works.

+ Rs. 36,065.—Due to grant of local allowance for high prices to the subordinates on the temporary establishment and to increased expenditure under Roads and Buildings.

B. Establishment.

+ Rs. 85,530.—Due to the increased expenditure under salaries consequent on the reorganization of the Imperial and Subordinate Forest Establishment, to the drawing of leave allowances of officers of other Circles on leave from the Central Circle Office, and to local allowance for high prices granted to Subordinate Establishment.

CHAPTER IV.—RESEARCH AND EXPERIMENTS.

15. *Research.*—No research of any value was done during the year.

EXPERIMENTS.

Cassia auriculata—(Tangedu) Sowing.

16. *Golla Tangedu Sowing Experiments.*—The place selected is in Golla Reserve which is situated about 25 miles from Anantapur on the road to Kalyandrug. The ground is undulating and the soil gravelly and very stony, the whole surface being covered with stones about the size of one's fist. The greater part of it was probably

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at one time cultivated, but the soil is very poor and in this dry district the success of crops on such land must be extremely problematical. There is a scattered growth of *Acacias* (*sundra*, *planifrons*, *latronum* and *leucophlœa*), *Randia* and a few *Cassia auriculata* and *fistula*. It is just the kind of place in which tangedu should be grown, i.e., land which it is possible to plough but which is too poor to yield profitable field crops.

Six different methods of sowing, each on an area of not less than 5 acres, have been tried. These are —

I. Broad-casts owing with no wounding of the soil.

II. Sowing in furrows about 2½′ apart and 4″ to 6″ deep. The furrow is first made by ploughing, then seed is sown in it and the furrow is closed by another being ploughed alongside it.

III. Broad-cast sowing followed by close ploughing in one direction.

IV. Broad-cast sowing followed by close ploughing first in one direction and then at right angles.

V. Close ploughing in one direction followed by hoeing with a 3—pronged fork (or Goru) at right angles; then seeds sown in furrows made by the prongs of the goru, which are about 6″ apart, and finally the whole gone over by a "guntakah" or iron plate drawn by four bulls in the same direction as the original ploughing was done to root out grass, wound the soil and cover the seeds.

VI. Dibbling seeds under trees in soil wounded to a depth of about 6″ by a spike or crow-bar.

Method I has been carried out in Plot 12 of 6 acres. The sowing was done on 12th October 1919. There were 7 cents of rain on 13th October and 40 cents on 17th October; then no rain till 5th November when the soil was moist. Fifteen seers of seeds were used. The seeds did not germinate and there are now no seedlings. No cost was incurred as the sowing was done by subordinates.

Method II has been carried out in plot 1 (5·3 acres), plot 2 (7 acres), plot 9 (6 acres), and plot 24 (5 acres). Plots 1 and 2 were ploughed and sown on 11th September 1919 and plot 9 on the 13th September 1919 during the burst of the North-east monsoon. Plot 24 was sown on 19th November 1919 after 1·70 inches of rain on 11th, 14th, 15th and 17th November. The quantity of seed used in the above four plots was 52 seers, 73 seers, 62 seers, and 40 seers respectively. In plots 1, 2 and 9 germination began on the 5th day after sowing. There was rain at intervals for about a month after sowing and moisture in the soil for some 45 days after sowing. In the case of plot 24 there was no rain after sowing till January and there was no germination till then. A few seeds germinated as a result of 50 cents of rain on 3rd January, but the tiny seedlings all died owing to continued drought afterwards. The cost of sowing and ploughing by this method comes to 14 annas per acre. A sample plot of one-eighth acre in plot 2 showed 6,590 seedlings in January 1920, 6,473 in February, 5,686 in March, 2,179 in April, 1,007 in May, 592 in June and no casualties since. Seedlings are mostly 2″ high and some may die next hot weather.

Method III was done in plot 11 (5·5 acres) and on about 2 acres of plot 15. In plot 11 the sowing and ploughing was done on 22nd September after the burst of the north-east monsoon and with some rain after sowing. In plot 15 the sowing and ploughing was done on 19th November after 1·70 inches of rain but with no rain afterwards till a little in January 1920. 108 seers of seeds were used for plot 11 and 50 seers for plot 15. In plot 11 seeds began to germinate on the 6th day after sowing. In plot 15 there was no germination till January when a few seedlings appeared as a result of a little rain. These were said to have all died owing to prolonged drought afterwards. I, however, noticed a very few seedlings which are probably due to germination of dormant seeds quite recently. The cost of the method is Rs. 1-11-0 per acre. A sample plot of one-eighth acre in plot 11 showed 18,818 seedlings in January 1920, 18,423 in March, 17,969 in April, 17,185 in May, 16,040 in June, and since then no casualties. Seedlings are now mostly 4 inches to 5 inches high, have more leaves than those by method II, and may be called established.

Method IV was carried out in plot 23 (5 acres). Ploughing and sowing were done on 25th and 26th September 1919 and 136 seers of seed were sown. Germination began on the 5th day after sowing. The cost works out at Rs. 3–9–6 per acre.

A sample plot of one-third acre showed 12,727 seedlings in January 1920, 12,445 in March, 12,175 in April, 11,842 in May, 11,519 in June and no casualties since. Seedlings are now exactly in the same stage as those by method III. *Central Circle.*

Method V was carried out in plot 10 (5 acres). The ploughing, etc., and sowing were done on 21st and 22nd September 1919 and 104 seers of seeds were used. Germination started on the 6th day after sowing. The cost is Rs. 4-2-0 per acre. Enumeration on a sample plot of one-eighth acre showed 27,167 seedlings in January 1920, 27,050 in March, 26,775 in April, 26,486 in May, 26,394 in June and no casualties since. The seedlings are larger and stronger than by any other method, now 8 inches high on an average.

Method VI was carried out in plot 13 (5·6 acres) in patches under trees bushes and prickly pear on 8th October 1919 when the soil was moist. There was a little rain on 13th and 17th October and 1·82 inches of rain in November. Germination began on the 6th day after sowing. The cost comes to Rs. 1–6–0 per acre. Enumeration of seedlings in 4 patches showed 3,314 in January 1920, 3,133 in February, 1710 in March, 311 in April, 75 in May, 10 in June and 7 in July. These few remaining seedlings look miserable and will probably not survive. No weeding or tending of any sort was done in any of the plots after sowing.

We have obtained very valuable results:—

(*a*) That the cheapest successful method is II, that it costs 14 annas per acre and that by it sufficient seedlings are obtained to stock any area, about 4,800 per acre.

(*b*) That by method III at double the cost we obtain about 27 times as many seedlings as by method II and that they are somewhat better grown at the end of a year.

(*c*) That method IV is no better than III and costs Rs. 3-9-0 per acre against Rs. 1-11-0 per acre.

(*d*) That by method V about twice as many seedlings are got as by methods III and IV, that the seedlings are better grown at the end of a year than by those methods and that the cost is Rs. 2-7-0 per acre more than in the case of method III and 8 annas 6 pies more than in the case of method IV.

(*e*) That tangedu sowings under bushes fail.

(*f*) That late sowings fail.

Tangedu sowing experiments were also carried out in *Bellary*, *West Cuddapah*, *Chittoor* and *Nellore* Divisions, but without the same amount of care and supervision. The District Forest Officer, *Chittoor*, found that germination and growth were best where debris had been burnt before sowing.

17. *Sandal root wounding to produce sucker reproduction.* In September and October 1919 and in January 1920 ten groups of sandal wood trees were selected in Reddigunta Coupe I of Chittoor Range, *Chittoor* Division, with a view to seeing how much the trees could be spread by means of root-shoots. Trenches were dug around these groups over a length of 2,379 running feet. Numerous sandal shoots have made their appearance but whether they will eventually come to anything remains to be seen.

18. *Red sanders regeneration experiment.* With a view to find out the best method of regenerating red sanders and the effect of tending and to ascertain what time the seedlings take to establish themselves, two separate sample plots, one in Coupe I of the Kodivengamma bhavi North Improvement Felling Series and the other in Coupe I of Gadela Improvement Felling Series, both in Kodur Range, *South Cuddapah* Division, have been laid out. In the former the plot is divided into parts A, B, C, D, and E, of about half an acre each. A and B are unburnt, while C, D and E have been burnt. A has been left as it was, while in B all growth around Red Sanders seedlings and fire-coppice has been grubbed out to a radius of $1\frac{1}{2}$ feet. In the burnt area all growth except *Pterocarpus santalinus*, *Chloroxylon Swietenia* and *Anogeissus latifolia* was cut and removed. In C no sowing was done, while in D red sanders was sown broadcast and in E seeds were dibbled 5 feet apart. As the

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first dibbling in plot E was a failure, fresh dibbling was done. The experiment was started in September 1918, and results are given below :—

Observations recorded in Kodivengammabhavi North Improvement Felling, Coupe I, Sample plot laid out on 4th and 5th September 1918 to find out best method of regenerating Red Sanders and the effect of tending in such a regenerated area :—

Date.	Plot A (unburnt and untended).		Plot B (unburnt and tended).		Plot C (burnt and tended).		Plot D (burnt tended and sown broad cast).		Plot E. dibbled 631 seeds dibbled.
	Seedlings.		Seedlings.		Seedlings.		Seedlings.		
	Living.	Died back and fire coppice.	Living.	Died back and fire coppice.	Living.	Died back and fire coppice.	Living.	Died back and fire coppice.	
15th October 1919 ..	..	..	1	203	11	246	181	121	..
16th ,, ,, ..									
9th November ,, ..	34	52	7	80	11	246	181	121	237
5th February 1920 ..	..	..	..	..	..	..	219	385	271
22nd ,, ,, ..	39	69	14	88	..	..	..	..	..
5th March ,, ..	..	..	..	..	..	..	..	..	235
5th April ,, ..	..	..	..	..	..	..	..	..	156
10th May ,, ..	..	..	..	..	..	..	..	..	84
19th June ,, ..	..	..	..	..	..	..	..	..	61
3rd July ,, ..	4	136	13	179	3	254	18	128	30

The experiment must be continued for another year to give definite results. The Gadela improvement felling coupe I. experiment is with a view to ascertain the time required by seedlings to establish themselves. A sample plot of about 1 acre was laid out on 5th February 1919. To start with, there were 124 seedlings and 158 died back shoots and these were cleared to a radius of $1\frac{1}{2}$ feet. The results are given below :—

Date.	Seedlings.			Shoots.		Remarks.
	Living.	Died back.	Total.	Living.	Died back	
1919						
5th February	124	..	124	158	..	
21st April	46	78	124	158	..	
31st May	6	118	124	154	4	
16th June	100	24	124	..	..	
27th ,, ...	67	57	124	158	..	
27th August	103	24	127	..	..	Three new seedlings traced since last observation.
21st November	383	12	395	173	6	Two hundred and seventy-three new seedlings traced since the opening of the plot due to good seed year and heavy north-east rains.
31st December .. .. 1920.	382	13	395	173	6	The enumeration shows how seedlings die back and sprout again.
31st January	365	30	395	175	4	The observation on 6th July 1920 shows how seriously drought has affected the seedlings.
31st March	188	237	395	173	6	
1st May	178	247	395	173	6	
31st ,, ...	156	269	395	173	6	
6th July	88	337	395	166	13	

This experiment will also be continued for another year. An experiment was carried out in a 2 acre plot in Inupurallamitta felling series of Mamandur Range, *Chittoor* Division, with the object of ascertaining whether regeneration of red sanders is assisted by fire or the reverse. An enumeration of the two most valuable species was made when it was found that in the burnt part there were 112 seedlings of *Pterocarpus santalinus* and 132 seedlings of *Chloroxylon Swietenia*, while in the unburnt part there were only one or two seedlings here and there. This indicates that burning has a decidedly beneficial effect on the regeneration of these two valuable species. The District Forest Officer is arranging to carry out further experiments on a more extensive scale and in different localities so as to make sure of the results.

Cassia Fistula.

19. With a view to arriving at the most suitable size and age at which to cut Cassia fistula for bark, an area of 718 acres in Kadiri Range of *Anantapur* District was

selected and divided into ten blocks and the existing trees therein enumerated and numbered. One hundred and seventy-seven acres in block 1 were coppiced in November 1919 and such coppicing will be carried out annually so that eventually a series of shoots from one year old upwards will be obtained. *Central Circle.*

Anogeissus latifolia.

20. Experiments were conducted with a view to determine the yield of shumac from the young leaves of *Anogeissus latifolia* in the districts of *Anantapur*, *Guntur*, *South Cuddapah*, *West Cuddapah*, *Nellore* and *Chittoor* and the results of the experiments are mentioned below:—

Anantapur.—Twenty-one trees were pollarded in the Nigidi reserved forest of Kadiri Range on 20th October 1919. Pluckings of leaves took place up to the 2nd April 1920 at intervals of between three and six days. The yield after the leaves were well dried was as below:—

	LB.	OZ.
Red leaves	3	$2\frac{5}{8}$
Green leaves	0	$8\frac{1}{8}$

Guntūr.—Twelve trees of Anogeissus latifolia were selected on 5th July 1919 in Parcelle No. 89 of Venkatayapalem Reserve. The red and green leaves were plucked as they appeared and the results are shown in the statement:—

Month.	*Quantity plucked.* Red.	Green.
	OZ.	OZ.
July 1919	.....	
August ,, ...	...	
September ,, ...	$3\frac{1}{8}$	$7\frac{3}{4}$
October ,, ...	$5\frac{1}{4}$	$13\frac{1}{8}$
November ,, ...	$1\frac{1}{4}$	$3\frac{1}{8}$
December ,, ...	$2\frac{3}{16}$	$3\frac{1}{8}$
January 1920	$\frac{5}{16}$	...
February to July 1920	.....	

The number of trees selected for experiment being considered insufficient, a further plot of 5 acres was selected. This has been divided into two equal parts; in one part all trees were cut at a height of 1 foot from the ground and in the other they were pollarded at the top of the main stem. The leaves were plucked at the initiation of the experiment. The green leaves weighed $262\frac{1}{2}$ lb. and the red $18\frac{3}{4}$ lb. From 17th February to 3rd May 1920 no shoots were thrown up. Plucking was again done on 11th July 1920 with the following result:—

(*a*) In the plot where the trees were cut close to the ground the yield of the red and green leaves was $8\frac{1}{8}$ oz. $13\frac{3}{4}$ oz. respectively.

(*b*) In the other plot the yield was $7\frac{3}{4}$ oz. and $11\frac{1}{4}$ oz. respectively.

The following is the result of plucking on 29th July 1920.

(*a*) In the plot where the trees were felled close to the ground the yield of the red and green leaves was 1 lb. $12\frac{1}{8}$ oz. and 5 lb. $13\frac{3}{4}$ oz. respectively.

(*b*) In the plot where the trees were pollarded at the top of the main stem the yield of the red and green leaves was 2 lb. $9\frac{7}{8}$ oz. and 6 lb. $6\frac{1}{2}$ oz. respectively. The experiment is being continued. There is in this experimental plot no appreciable difference in yield of leaves by pollarding and coppicing.

South Cuddapah.—Two sample plots, one in Balapalli Range and the other in Kodur Range, were laid out in July 1919, and *Anogeissus* trees of various dimensions were pollarded—264 trees in the former and 130 trees in the latter—and shumac collected from the fresh flushes of leaves. Twelve pluckings were done from August 1919 to April 1920 with the result that $21\frac{1}{2}$ lb. of red shumac, and $14\frac{1}{2}$ lb. of green shumac were collected from the former plot and 3 lb. of red shumac and $3\frac{3}{4}$ lb. of green shumac from the second plot.

An area of 5 acres was selected in Konarajapalli Reserve, where the growth is almost pure *Anogeissus*, and has been divided into two plots of $2\frac{1}{2}$ acres each. In April 1920 in the first plot all trees were cut at a height of 1 foot from the ground and in the second all trees were cut flush with the ground. The number of trees cut in the first plot is 1,006 and in the second 635 and their girth varies from 8 inche-

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to 4 feet. The first collection of red leaves was made on 25th April 1920 and subsequent collections were made once a week. The following shows the yields :—

Red shumac.

Date of collection.	No. 1 plot (Pollarded).		No. 2 plot (coppiced).	
	Fresh weight.	Dry weight.	Fresh weight.	Dry weight.
1920.	LB. OZ.	LB. OZ.	LB. OZ.	LB. OZ.
25th April	3 9¾	1 11⅜	..	..
2nd May	5 0	2 7⅜	1 7	0 11¼
9th ,, ...	12 6¾	7 9½	4 3¾	2 8
16th ,, ...	7 11	3 13¼	2 8	1 5¼
22nd ,, ...	7 8	3 12¼	5 2¼	2 11½
31st ,, ...	27 11¾	12 5⅜	13 12¼	6 2¾
Total ..	63 15¼	31 10¾	27 1½	13 6¾

From the above it appears that trees cut at 1 foot from the ground yield more red shumac than those cut flush with the ground.

Nellore District.—Two plots of 2 acres each in the Yerragonda Reserve were selected in January 1920. In one plot the trees were pollarded and in the other they were coppiced. The results of plucking from February to July 1920 are that the coppiced plot has yielded 1 lb. 8¾ oz. of red shumac and 3 lb. 6 oz. of green shumac, while the pollarded plot has yielded 3 lb. 8¼ oz. of red shumac and 6 lb. 12 oz. of green shumac, a considerably better result being shown by pollarding.

Chittoor District.—A plot was selected in November 1919 and 40 trees were pollarded in it. The District Forest Officer considers from his own observations and from the reports received from the Range Officer, that the best results are got from small trees. Trees between 6 inches to 12 inches in girth yield more red leaves than those of larger girth.

Fodder grass.

21. To improve the growth of grass in grazing areas it was decided at a conference held in *Nellore* towards the end of January 1920 to select a few reserves and treat them purely with a view to obtain the maximum yield of fodder. To obtain this result, it is proposed to fell and uproot prickly-pear and all species of plants the leaves of which are not eaten by cattle. From local enquiries and observations it is found that in the scrub dry evergreen forests of the Nellore and Kavali Ranges, where this operation is to be conducted, the following species of plants are not touched by cattle, and hence will be uprooted.

1. *Acacia latronum.*
2. *Prosopis spicigera.*
3. *Carissa Carandas.*
4. *Zizyphus oenoplia.*
5. *Do. xylopyrus.*
6. *Limonia alata..*
7. *Dichrostachys cinerea.*
8. *Acacia Sundra.*
9. *Calotropis Gigantea.*

After this is done, species of good fodder grasses will be sown.

So far, only sample plots have been felled and data collected to estimate the cost of such operations. The actual work can only be carried out after the break of the monsoon

CHAPTER V.—ADMINISTRATION.

TOURS.

22. *Chief Conservator's tour.*—The Chief Conservator visited the *Chittoor* District in November 1919 and gave the District Forest Officer instructions in several matters. He attended the Kancha Conference held at Nellore in January 1920 and inspected with the Director of Agriculture and Conservator South Mopur, Nellore and Amencherla Reserves in connexion with the improvement of the Kancha system. He visited the *South Cuddapah* Division in March 1920 in connexion with a conference held at Kodur about fire-protection.

23. *Conservator's Tour.*—The Conservator visited the Moka Plantations of *Bellary* District in July 1919 and the Golla Reserve in *Anantapur* in August 1919 and selected an area in the latter for tangedu sowing experiments, the object being to

arrive at the best method of sowing with the least expenditure; he also inspected the Muchukota Reserve in the same district. Some of the Reserves of Chittoor, Chandragiri Palmaner and Madanapalli Ranges of the *Chittoor* District were inspected in August 1919, December 1919, and May and June 1920. The Forests of *North Cuddapah* Division and those of Rajampet and Kodur Ranges of *South Cuddapah* Division and certain coupes of the Palakondas and shumac experimental plots in Konarajapalli Reserve of *West Cuddapah* Division were inspected in October and November 1919. The forests in Palnad and Vinukonda Ranges of *Guntūr* District were inspected by him in February 1920 to consider the proposals for the settlement of Chenchus in Palnad and to consider the Working Plan for Bollapalli forests which was then under preparation. The forests of the following divisions—*Nellore*, *Chingleput* and *West Cuddapah*, excepting certain coupes of the Palakondas and shumac experimental plot in Konarajapalli Reserve—were not inspected by the Conservator during the year although he spent 180 days in camp. It seems very necessary to create more circles so as to give a Conservator a chance of seeing something of the forests of all his divisions during the course of a year and of familiarizing himself on the spot with the outstanding questions in each. It is understood that proposals to this end have been made. *Central Circle.*

Touring of the District Forest Officers.

24. All the District Forest Officers spent more than the prescribed minimum period in camp except the District Forest Officers, *Bellary*, *West Cuddapah* and *Chingleput*. With regard to *Bellary* and *West Cuddapah*, short touring was due to the officers having been on leave and in *Chingleput* it was due partly to the District Forest Officer being laid up with influenza and partly to undergrowth clearing work in Guindy Park requiring his presence at headquarters.

Inspections.

25. *Conservator's Inspections.*—All District Forest Offices were inspected by the Conservator during the year.

26. *Inspection of Range Offices.*—All Range Offices were inspected except Kavali of *Nellore*, which has been since inspected.

List of Offices audited.

27. The accounts of all offices except the three *Cuddapah* Divisions and *Chingleput* were audited by the Assistant Inspector of Local Fund Accounts and the result was generally satisfactory.

Vernacular Training School.

28. The school was held in the *North Cuddapah* division during the year. It opened with 29 students (12 foresters and 17 forest guards), but only 25 actually completed the course of training. The District Forest Officer, *North Cuddapah*, thinks it advisable, and I agree with him, to have the Vernacular Training School for the Circle always in *North Cuddapah* Division as this division has all facilities for training the students. If the Vernacular Training School is held in the same division every year the camps can be made more comfortable and the curriculum standardised. Either the number of subordinates deputed for training should be increased or two Vernacular Training Schools held so that all our permanent protective establishment may be trained within a reasonable time.

29. *Health of the establishment, including an account of measures of sanitation and casualties.*—The health of the establishment was satisfactory in all districts except the three *Cuddapah* Divisions and in Sriharikota Range in *Nellore* and Mamandur Range in *Chittoor*. A forest guard in *Bellary* died of influenza. In *Anantapur* a Ranger and a Forester died. In *Guntūr*, Palnad and Vinukonda Range subordinates are subject to guinea-worm. In *South Cuddapah*, a forest guard died of malaria. In *West Cuddapah*, two clerks in the District Forest Office died and a Forester died of malaria. In *Chittoor* District, a forest guard died of malaria.

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In order to improve the health of the establishment at Mamandur, a water-supply scheme was investigated and the Assistant Sanitary Engineer to Government visited the locality. Whether the scheme will mature or not depends on whether the source of supply will hold out throughout the dry weather and on the cost.

CHAPTER VI.—GENERAL.

Formation and management of panchayats (to include Forest village system).

30. During the year under report three panchayats were formed, one each in the districts of *Bellary*, *Anantapur* and *Guntūr*. Two panchayat forests in *Bellary* were resumed by the department on account of the lease not having been renewed by the panchayatdars in one case, and on account of change of classification of the reserve to class I in the other case. Eight panchayats (six in *Anantapur*, one in *West Cuddapah* and one in *Nellore*) were proposed to be started in the year. Four of these are deferred pending the report of the Special Panchayat Officer, while three of *Anantapur* and one of *West Cuddapah* were dropped as the ryots were unwilling to take up their management. The following panchayats are reported to have worked unsatisfactorily:—two in *Anantapur*, for which proposals for dissolution have been placed before the Collector, and five in *Guntur*, the gross mismanagement of which was brought to the notice of the Collector or Revenue Divisional Officer. In *Bellary* District goat browsing in almost all panchayat areas and illicit cutting in two panchayat areas were discovered If there is no improvement next year, the District Forest officer proposes to resume the last two panchayat areas. In *West Cuddapah* the management of nearly all panchayat forests was unsatisfactory. No improvements were effected, and illicit fellings and goat-browsing were noticed. No accounts were maintained and there has been no limitation to the number of cattle grazed.

In *Chingleput* the Meyyur Plantation and Walajabad Tope, which were declared reserved land by the Collector under rule 5-A of the rules under section 26 of the Forest Act, were worked under the Forest Panchayat system with fair results.

Other panchayats are reported to have worked more or less satisfactorily. A Special Officer has been appointed to investigate the question of panchayat management and it is hoped that his labours in this direction will prove beneficial.

2. Measures for improving local supplies and facilities (including water-supply, fuel, manure leaves, etc.).

31. *Water-supply.*—Permission was accorded to ryots to construct, improve and repair tanks, water channels and wells inside reserves in *Guntūr* and *Cuddapah* and the Department undertook some repairs of the above nature in *Cuddapah*, *Nellore* and *Chingleput*. For the improvement of the grazing grounds in six grazing working circles of Chingleput Range, prickly-pear and thorny growth were removed from worked coupes.

Fuel.—In all districts coupes were opened wherever there was demand and were leased to contractors. In *South Cuddapah* and *Nellore* there is little demand from local people for Government forest fuel as there are many Shrotriem and Zamindari Forests to meet their requirements. The working scheme for the forests adjoining the mica mines in Nellore to meet their demand for fuel, referred to in the previous administration report, is still under consideration.

Manure leaves.—No special measures were adopted during the year to encourage the growth of manure leaf yielding plants. In *Anantapur* District reserved forests the removal of manure leaves has been prohibited for 1920–21 and this may result in ryots taking to growing manure species in private lands. Indiscriminate removal of *Cassia auriculata* leaves for manuring from unreserves may eventually lead to the shrub becoming less numerous.

Timber transit rules.

32. Timber transit rules continue to be in force in *Guntūr*, the three divisions of *Cuddapah* and *Chittoor*, and are reported to have worked satisfactorily. The rules are useful in putting down sandal smuggling in the Palmaner range of *Chittoor*.

4. Jungle tribes.

33. The Chenchus in the Palnad Range of *Guntūr* District were allowed at the time of Forest Settlement the concessions enumerated below :— *Central Circle.*

(1) The produce of tamarind trees, to be enjoyed by them on their paying four annas and two annas per tree according to the nature of usufruct.

(2) Other minor forest produce—honey, wax and soapnuts—to be given free.

(3) Free supply of hutting materials.

(4) Free grazing of cattle subject to restriction if the number is increased.

(5) Free hunting and shooting.

It was found that these concessions and the presence of the Chenchus in the forest were fraught with great danger not merely to the forests, but also to the public good. The Chenchu colonies in the forests were made use of by Lambadies also who went to them on the pretext of grazing and penning their cattle. Actually they were more of the nature of robbers' dens than Chenchu colonies. A scheme has therefore been prepared by the District Forest Officer during the year which contemplates extinguishing the concessions granted to Chenchus, their settlement on cultivable land in the proximity of villages and abolition of their forest colonies.

In *Nellore* District the collection of minor forest produce in Sriharikota Range was done departmentally as usual through the agency of Yanadies.

5. Mining and quarrying.

34. In *Bellary* a licence was granted to Messrs. Byramji Pestonji and Company, Nagpur, for mining manganese ore in Tambaraguddi Reserve in Kudligi Range for one year from 19th December 1919. Twenty thousand tons of manganese forfeited to Government through the closure of the South Indian Manganese Company is lying in the Thumberguddа Reserve in *Bellary* District and attempts are being made to have the quality tested and to find a purchaser.

In *Anantapur* no new licences for prospecting minerals were issued. Applications from Messrs. Ghouse and Sesha Reddi for prospecting for "Barytes" in Nirzampalli Reserve are still under consideration. An application from Mr. Sesha Reddi for prospecting steatite in Muchukota Reserve and for prospecting asbestos in Yediki Reserve are also under consideration.

The application of Mr. Pitchayya Nayudu, Proprietor, Mica Mining Company, Mysore, for prospecting chromium in Sankarakallu Reserve was rejected and on an appeal to the Board the matter is under reconsideration.

In *West Cuddapah* the contractor for steatite (soap stone) has not removed any produce though he paid the lease amount. This product will be sold again during 1920–21 if there is demand for it. Two applications were received for white clay and they have not been finally disposed of.

6. Livestock.

35. (*a*) *Elephants.*—Nil.

(*b*) *Other animals.*—In *Chittoor* there are two buffaloes kept for watering plants in the Horsleykonda Garden. They are being looked after by the local staff and no expense was incurred on their upkeep. In *Chingleput* one buffalo is maintained for watering sandal seedlings on the Kambakkam Plateau and for gardening purposes round the Kambakkam Hill bungalow.

7. Veterinary establishment—*Nil.*

8. Civil Suits.

36. The suit against the original purchaser of Pamuleru Coupe II, *South Cuddapah*, leased out during 1917–18, is pending disposal in the *Cuddapah* District Court and it stands adjourned to 4th September 1920. In *West Cuddapah* the Putlampalli Shrotriem suit was dismissed with costs during the year.

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In Nellore.—The Jagirdar of Pamur Estate has given notice claiming a portion of Vedullacheruvu reserved forest and this is pending receipt of a map from the Survey of India. In the Nandavanam A block suit, instituted by the Raja of Venkatagiri, the District Court having decided in favour of the department, the Raja has appealed to the High Court and the appeal is to be heard shortly.

In Chittoor.—The decree of the District Munsif's Court, Chittoor, in the suit instituted by the Zamindar of Bangaripoliem claiming certain land said to have been wrongly included in Musalimadugu forests being unfavourable to the zamindar, an appeal by him is under enquiry by the Additional Subordinate Judge, Chittoor, and the result is awaited.

9. Control of unreserved lands by the Forest Department.

37. The only unreserved lands that are under the control of the Forest department are the Meyyur Plantation and the Walajabad Tope in *Chingleput* District. They were worked under the forest panchayat system during the year with fair results as observed above.

H. C. BENNETT,
Acting Conservator of Forests, Central Circle.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

FOREST YEAR ENDING 30TH JUNE 1920.

SOUTHERN CIRCLE.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

I. ALTERATION IN AREA.

Reserved forests.—The area at the beginning of the year was 4,243 square miles. As the result of additions and exclusions during the year, as detailed in form No. 65, the total area at the end of the year was 4,268 square miles. *Southern Circle.*

It is to be regretted that there have been several instances in which the original notifications under section 16 have been found defective. Steps are being taken to rectify the defects.

Reserved lands.—The year began with an area of 65 square miles and ended with an area of 45 square miles. The decrease is due to the transfer of certain areas of reserved lands to reserved forests.

II. FOREST SETTLEMENT.

2. Three blocks in *North Vellore*, one in *South Vellore*, one in *West Vellore*, four in *North Salem*, one in *Trichinopoly*, and one block in *Tinnevelly* were finally settled during the year. Fourteen blocks are pending final settlement, as detailed in form No. 66. The cost of settlement during the year was Rs. 2,993.

III. DEMARCATION.

3. Final demarcation was carried out in *West Vellore*, *Trichinopoly* and *Madura*, over a length of 2, 13 and 14 miles respectively.

In *North Vellore*, 31 miles of working Circle lines were cleared and 17 miles of coupe lines were demarcated, at a cost of Rs. 350.

West Vellore.—Sixty miles of reserve boundary lines were reclеared at a cost of Rs. 196.

South Arcot.—Rectification of defects in the demarcation of Adukkam, Talanayar and Kodiakadu reserved forests was carried out at a cost of Rs. 539.

North Salem.—Rupees 30 was spent on the cutting of reserve boundary lines.

South Salem.—Rupees 325 was spent on demarcation and the clearing of lines.

Trichinopoly.—Rupees 293 was spent on permanent demarcation and the clearing of 4 blocks, and the reclearing of 14 miles of the boundary line of two blocks.

Madura.—Rupees 758 was spent on demarcation of reserves and enclosures, and in demarcating boundaries between Government and zamin forests.

Fifty-two miles of boundaries still remain to be demarcated.

IV. FOREST SURVEYS.

(*a*) *By the Survey of India Party.*

4. The party confined its operations to Milavittan reserved forest and Valliyur extension reserved forest of *Tinnevelly* division, the area of these reserves surveyed being 2·9 square miles (1·8 square miles in Milavittan and 1·1 square mile in Valliyur extension) on the 2-inch scale.

(*b*) *By Madras Survey.*

5. The Revenue Survey Party is reported to have taken up and completed the survey of eleven Class V—Forests in Lalgudi and Musiri taluks of *Trichinopoly* division during the year in accordance with Board's Proceedings, Revenue Settlement Mis. No. 127, dated 31st January 1920, Board's Proceedings, Forest Mis. No. 190,

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dated 18th May 1918 ; and of three Class VI Forests in Samayapuram taluk, *Trichinopoly* district, in accordance with Board's Proceedings, Forest Mis. No. 263, dated 28th June 1918, and Board's Proceedings, Revenue Settlement Mis. No. 1785, dated 14th August 1918.

(c) By Departmental Survey.

6. All the coupes were surveyed by the ordinary staff except in *North* and *South Salem*, where survey work was done by special surveyors, and in *Madura* in the Sholavandan range, where the work was done by a supervisor on the temporary scale, whose employment had been sanctioned under the working plan.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

I. Regulation of Management.

Preparation and control of regular Working Plans.

7. *Preparation.*—During the year under report, a revised working-plan for bamboos and minor forest produce relating to the *South Vellore* division received the Chief Conservator's approval.

A working-plan for the Class II Forests in the Gingee range of the *South Arcot division* is reported to have been compiled, but has not as yet been received in this office. A working plan for the Kassan (*Memecylon edule*) forests in the Udayarpalayam taluk of the *Trichinopoly division* was received during the year and is under consideration.

It has to be noted that almost all the working-plans in force in this Circle require revision. This work should be taken up by Extra Assistant Conservators assisting the District Forest officers, where their services are available. The field work connected with the revision of the working-plan for bamboo areas in *North Vellore division* is reported to have been completed. In *West Vellore*, the areas under bamboos were stock-mapped during the year.

8. *Control.*—(Working-plans which are entirely out of date and the prescriptions of which are being followed in a general manner only, are not dealt with below.)

The prescriptions of the Javadis Sandalwood working-plan (*South* and *West Vellore divisions*), of the Hosur Sandalwood Working Plan (*North Salem division*), and of the revised working-plan for the fuel forests of *Madura* division are being carried out, deviations being sanctioned under proper authority, when necessary. In *South Arcot division*, the prescriptions of the five years' scheme sanctioned for the class II forests of the Kallakurichi range could not be carried out in respect of the bamboo areas, as the enumeration and mapping were found to be faulty ; but otherwise the scheme was adhered to, with a few minor deviations.

II. Communications and Buildings.

(a) Roads and Bridges.

9. The current plan of major road works in this Circle is that which deals with the opening up of communications on the Javadis of the *North Arcot* district (*South* and *West Vellore divisions*). The works connected with this scheme are in sole charge of the Forest Engineer, and the progress made by him during the year is as noted below :—

	Amount spent.
	Rs.
(1) Part construction of Amerdi-Nadanur road	53,832
(2) Do. the Komattiyeri Patrakad road	34,330

In spite of the difficulties connected with execution of work in so feverish a locality, the whole of the earth-work in the lower section, i.e., the first six miles, of the Amerdi-Nadanur road, is nearing completion, and fair progress is reported to have been made on the Ghat portion, in the upper section of the road. In the case of the Komattiyeri-Patrakad road, most of the earth-work in the first eight miles is reported to have been completed.

Construction by the District Forest officer, in *Madura*, of an unmetalled road from Kovilur to Thoppaswamimalai (about five miles) was undertaken in order to facilitate transport of fuel to Madura town, and this work is reported to have been practically completed during the year. Construction of an unmetalled road from

Anjukulipatti to the Dindigul-Nattam road (six miles) in the same division, for the same purpose, was completed during the year. And construction of the Rajadani-Usilampatti road (about seven miles) in the same division and for the same purpose was commenced during the year. All these road works in Madura were in accordance with the prescriptions of the revised working plan for the fuel forests of the division. *Southern Circle.*

(b) Buildings.

10. During the year under report, the following buildings prescribed in sanctioned working plans were completed :—

South Vellore.—Rest-houses at Thongamalai and Komattiyeri, and deputy ranger's quarters at Bargur, all on the Javadis.

Madura.—Subordinates' quarters at Surulipatti and Ambatturai; stables and kitchen to the rest-house at Kalluthu; and an inspection-shed at Mulaiyur.

The construction of a rest-house at Rajadani and of subordinates' quarters at Puthur were proceeded with.

III. Protection of Forests.

(a) General Protection.

11. The following statement shows the number of offences registered during the year as compared with the previous year :—

	Injury to forests by fire.		Unauthorized grazing.		Unauthorized felling.		Other offences.		Total cases.	
	1918–19.	1919–20.	1918–19.	1919–20.	1918–19.	1919–20.	1918–19.	1919–20.	1918–19.	1919–20.
Cases taken to court ..	8	4	2,390	2,183	571	571	83	93	3,052	2,851
Cases compounded ..	3	7	5,356	5,939	1,570	1,661	178	242	7,107	7,849
Cases undetected ..	369	456	81	89	44	102	5	10	499	657
Total ..	380	467	7,827	8,211	2,185	2,334	266	345	10,658	11,357

There has been a general increase in the number of offences under all heads. This appears to be due to increase in the strength of the Protective Establishment, as a result of the Re-organization Scheme. In 1918-19, the number of deputy rangers, foresters, and forest guards employed in the Circle was 621; whereas by the end of 1919–20, the number of foresters and guards (the title of deputy ranger having been abolished) employed was 812. The number of watchers employed by the end of 1919-20 was less than the number of watchers employed during 1918–19; but the general effect of the Re-organization Scheme was to increase the strength of the Protective Staff. The effect of this increased strength may, in time, be to reduce the number of offences committed; but an increase in detection of offences is the result to be first expected.

Cases brought to trial.

Year.	Number.	Convictions.	Acquittals.	Percentage of failure.
1918–19	3,185	3,062	123	3·86
1919–20	3,468	3,334	134	3·86

The number of cases brought to trial increased during the year and the acquittals also increased, the percentage of failure to secure a conviction remaining the same. As in the previous year, the increase in the number of cases brought to trial is attributed to the lenient punishments inflicted by Magistrates. This was especially the case in *South Arcot* division and the matter was taken to the notice of the District Magistrate. His remarks on the subject are reproduced below :—

"As regards undue leniency of the Kallakurichi Sub-Magistrate, it is true that the fines have been too lenient, but the Sub-Magistrate may have thought them adequate. Deterrent fines may perhaps lead to more contested cases. Further, most forest offenders are poor people who cannot raise money to pay a heavy fine and the Kallakurichi Sub-Jail is often over-crowded as it is. The problem is not therefore easy to solve." The question as to the extent to which Forest offence is to be

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checked by the infliction of deterrent punishment is an important one. It is a matter for consideration whether District Magistrates should generally interfere in the matter, when reviewing the judgments of the Sub-Magistrates. The compounding fees and fines inflicted have increased but little during the past few years, whereas the value of money has generally decreased. And the punishments inflicted do not appear to have reduced the number of offences committed. The lack of accommodation in Jails obviously affects the matter, as noted by the District Magistrate of South Arcot. It would appear improbable that any alteration in the present policy of inflicting light punishments is practicable.

12. The instructions issued in G.O. No. 1990, Revenue, dated 13th June 1910, were generally adhered to when fixing compounding fees in grazing cases.

Patrol System.

13. *North Vellore.*—The system was continued during the year.

South Salem.—The system appears to have fallen into abeyance owing to sickness among the subordinates.

Trichinopoly.—The system is reported to have worked well.

The system is not in force in other divisions. A report will be called for as to the results of the system from the date of its introduction up to the present time.

14. *Rewards.*—The total amount of rewards granted during the year in this Circle was Rs. 200. The cases in which rewards were granted related to goat browsing in *South Vellore*, *South Arcot*, and *Trichinopoly divisions*, and to illicit felling of Sandalwood in *South Salem division*. The undersigned is of opinion that considering the number of important cases detected, District Forest officers do not generally recommend the grant of rewards as frequently or as liberally as they might with advantage do.

(*b*) *Protection from fire.*

15. *Special protection.*—The area under special protection fell from 1,510 square miles in the previous year to 1,486 square miles during the year under report. In the Cumbum Valley East and West Reserves (74·6 square miles) of *Madura division*, special protection was abandoned as it was found to be unnecessary. Twenty-nine square miles was added to the area under special protection in *North Salem division* in accordance with the prescriptions of the Hosur Sandalwood Working Plan. And 18 square miles was added in *South Salem division*, being the area of Reserved Lands notified under section 4. The area burnt during the year was 24·72 square miles as against 29·33 square miles in the previous year, and the percentage of area successfully protected was 98·34, as against 98·05 in the previous year.

The fire protection of the Sholas in the Ampthill Downs reserve in the *Madura division*, as per scheme sanctioned in Government Order No. 942, Revenue, dated 28th April 1915, is reported to have been unsatisfactory, a considerable area having been burnt. A revised scheme for protection of the Sholas was presented during the year.

16. *General protection.*—The percentage of failure increased slightly from 1·15 in the previous year to 1·31 during the year under report. Appendix A shows details as to the number and origin of fires. Despite the fact that there is a large increase in the number of fires when compared with the previous year, there has been only a slight increase in the area burnt. The number of fires and the area burnt increased in the divisions of *North Vellore*, *South Vellore*, *North Salem* and *Madura*. The increase in *North Vellore* is reported to be due to malice, consequent on the closure of important reserves to grazing; in *South Vellore*, to incendiarism by graziers with a view to securing the growth of fresh grass; in *North Salem*, to the fact that villagers resorted to the reserves wherein bamboos had seeded, with a view to the collection of the edible seed (the District Forest officer does not say whether grass is burnt below the clumps to facilitate collection of the seed, as in the case of Mowha); and in *Madura*, to the burning of grass on the Palnis for the securing of fresh growth.

(*c*) *Protection from cattle.*

17. There was during the year under report a very slight increase in the number of cattle impounded as compared with the previous year (37,378 as against 37,258). Detailed figures are given in Appendix B.

The policy of moderately raising the grazing-fees with a view to reducing the excessive incidence of grazing by inferior cattle, the economic value of which is small in proportion to the damage done by them to the forests, was continued during the year. *Southern Circle.*

Figures are given below :—

	Rates in 1918-19. Rs. A. P.	Rates in 1919-20. Rs. A. P.
South Arcot—		
Buffaloe	1 0 0	1 4 0
Cow	0 8 0	0 10 0
Sheep	0 4 0	0 5 0
Madura—		
Buffaloe	0 14 0	1 0 0
Cows and bulls	0 7 0	0 8 0
Sheep	0 4 0	0 6 0
North Salem—		
Buffaloe	0 8 0	0 12 0
Cow	0 4 0	0 8 0
Sheep	0 2 0	0 4 0

The actual incidence of grazing fell from 4·24 acres per cow unit during the previous year to 4·68 acres per cow unit during the year under report. Further details are given below under the head ' Exploitation '.

(d) Protection against injuries from natural causes.

18. *Prickly-pear.*—Orders were issued during the year to abandon attempts to eradicate prickly-pear by uprooting and burning it, owing to the prohibitive cost of the operation. It might perhaps be as well, as a last resort, to attempt to eradicate the pear by injecting ' Jansen's extirpator ' into the cladodes (see pages 40 and 41 of the report of the Prickly-pear Travelling Commission of Queensland, published in 1914, which contains the formula of the composition).

Lantana.—This pest continues to spread on the Javadis of *South* and *West Vellore divisions*; in the reserves of the Hosur taluk of the *North Salem division*; and in the unreserves on the top of the Pachamalais in the *Trichinopoly division.* The eradication of the pest is proceeding in *West Vellore* and *North Salem divisions.* In *West Vellore*, the operation is reported to be of doubtful success as the pest is reappearing very vigorously over areas cleared previously. Little progress is reported to have been made in *North Salem*, where, however, some regrowth in the areas previously cleared was uprooted and burnt by the students of the Vernacular Training School during the year. In *South Vellore*, this pest, wherever found on the Javadis, is reported to have been uprooted and burnt by the Malayalees.

Possible methods of suppressing the pest are referred to on pages XIII and 2 of the report of the Prickly-pear Travelling Commission referred to above; and it appears, from a recent article in the *Indian Forester* that investigation along the lines referred to by this Commission is now in progress.

Parasitic pests—North Vellore.—Insects attacking the *Red Sanders* in Banavaram reserve have been sent to the Government Entomologist, Coimbatore, for identification, and a reference from him in the matter is awaited.

Creeper cutting was undertaken in all the sandal bearing areas of this circle.

Strobilanthes.—This pest is reported to seriously interfere with the growth of teak coppice shoots on the Mundanthurai plateau of the Ambasamudram range in *Tinnevelly* division. An attempt on a small scale was made to clear the growth in Coupe I A of Padarmalai working circle and was given up as the shrub had seeded.

Sambhur are reported to cause much damage to the young sandal saplings in the special tending areas of the *West Vellore division*, and to teak regeneration from seed and coppice shoots on the Mundanthurai plateau in *Tinnevelly* division. The question of dealing with the difficulty and with damage by spotted deer referred to below, requires further consideration.

Spotted deer are reported to do much damage to the young coppice shoots in the fuel coupes of Kodiakadu in *South Arcot division.*

Elephants.—In *Tinnevelly*, these animals are reported to damage sandal and other saplings in the Alagar koil Valley.

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Semi-wild cattle.—Steps are now being taken to capture the semi-wild cattle grazing in Vallanad reserve, in *Tinnevelly* division.

IV. Sylviculture.

(*a*) *Natural reproduction.*

19. *North Vellore.*—Several areas containing sandalwood were cleared of creepers, and statistics are being collected regarding the density of growth.

It is stated to have been observed in this division that the coppicing of Divi-divi trees eventually has a noticeable effect in stimulating the production of the pods.

Tinnevelly.—The natural regeneration of the following species of evergreen forests was most noticeable where the overhead cover was removed to a certain extent :—

Balanocarpus utilis.
Gluta travancorica.
Mesua ferrea.
Hopea parviflora (along rivers and streams).
Nephelium Longana.
Filicium decipiens.

It is reported that 1919 was a bad seed year for *Hopea parviflora* and *Balanocarpus utilis*, and good for *Gluta Travancorica.*

In the tank proper of the Wolf Hill reserve, where water stands for more than half of the year, *Acacia arabica* stumps of 1917 are said to have died, but in the well-drained portions the coppice regeneration is said to be over 10 feet in height and to be quite healthy.

Reproduction of Mahagony by seed and coppice is reported to have been very good in Kaliavur Reserved Forest where this tree seeded profusely in 1919, during which year the ground was carpetted with seedlings, which died in the dry weather before May 1920.

Regeneration of several species by seed and coppice is noted to have been seriously interfered with by *strobilanthes.*

Bamboos.

20. Bamboos seeded in the whole of the *North Vellore division.* In one Tirupatur Javadis of the *West Vellore division* there was a gregarious seeding of *Bambusa arundinacea. Dendrocalamus strictus* also flowered here and there. In *North Salem* the seeding of the big bamboo was universal ; but parts of Dharmapuri and Hosur were not so much affected as the Salem west range. In *Trichinopoly division*, there was sporadic flowering of *Bambusa arundinacea* in the Naikankombai reserve of the Attur Kollimalais in January 1920, and the bamboos were dying in June 1920.

(*b*) *Artificial reproduction.*

21. *North Vellore.*—Twenty-nine acres of blanks in the Palar plantations were planted up, and 26 acres were sown with *Red Sanders*, *Hardwickia Binata*, and *Sissoo*, dibbled in on mounds. The soil was found unsuited to *Red Sanders* and seemed favourable to *Hardwickia Binata* and *Sissoo.* The exclusive allotment of different compartments for different species did not seem to be successful in Chenur and the sowing of *Neem* in the interspaces was tried, but without much success. As the plantations appear to be better suited for the growing of *Ingadulcis*, cashew, date palm, *Sissoo* and *Albizzia Lebbek*, it is proposed to introduce these species by sowing and by planting out basketted plants, the chief object of the plantations being the re-stocking of the area and the binding of the soil.

Broadcast sowing of sandal seeds in Synagunta extension reserve and planting of *Teak* and *Red Sanders* in Pichanur tope and Panamadangi plantation were not very successful owing, it is said, to drought. Artificial re-stocking of *Teak*, *Hardwickia Binata*, *Dalbergia Latifolia*, and *Red Sanders* was carried out free of cost in bungalow compounds, with varying degree of success.

South Vellore.—An area of 21 acres, which was cleared in the Amerdi plantation, was planted during the year with *Teak*, *Sissoo*, *Red Sanders* and *Hardwickia Binata.* The transplants did not fare well, owing, it is said, to heavy rains. With all attempts to replace casualties, it was not found possible to successfully plant more than 50

per cent of the area. A 20-acre plot was selected and cleared for planting during the current year. Pits were dug and nurseries got ready, but planting could not, it is stated, be carried out owing to the lateness of the rains of the current year. *Southern Circle.*

South and West Vellore.—The cultural operations prescribed in the Javadis Sandalwood Working Plan were carried out on the Javadis, and sandal seeds were dibbled profusely in the felled coupes and in the special and general tending areas in all the felling series. *West Vellore* reports that the clearing of the vegetation and the scratching of the soil do not appear to favour reproduction in the case of sandal. Steps were taken in *South Vellore* to induce natural regeneration of sandal from root-suckers in the special tending areas.

South Arcot.—The Taungya plantation of four acres in Pakkam reserved forest was maintained. Another plot of two acres was sown with 21 measures of teak seeds. Five hundred and eighty seedlings came up and these were transplanted in the plantation of 1918. There were 1,745 seedlings, in all, at the end of the year and these are reported to be doing well.

Sowings of seeds of Sandal, Red Sanders and Rosewood were carried out over 446 acres; and avaram (*Cassia Auriculata*) seeds were sown broadcast over 2,076 acres. The operation is reported to have been fairly successful, more than 50 per cent of the seeds having germinated and continued to thrive. Two experimental plots of 50 acres each were ploughed over and sown broadcast with avaram seed. The result is reported to have been excellent.

The undersigned has inspected the results of similar work in the Arkonam Plantation of *North Vellore division.* The method appears to be well suited to the species. It is evident that the growth of Avaram is very slow for the first three or four years of the plant's life.

South Salem.—Sandal seeds were sown in the plots selected and fenced in coupes I to IV of Compartments 1 and 2 of the Chitteri Sandalwood Working Circle, and in coupes I and II of all the other Sandal Felling series in the division. The germination varied from 3 to 30 per cent. A large quantity of seeds of Sandal, of various timber species, and of *Cassia Auriculata*, were sown elsewhere as in the previous year. The germination is reported to have been generally fair, and the seedlings are said to be thriving.

Madura.—No area was added to the existing plantations on the Palni hills during the year. The Teak in Vannathiparai and Velankombai Teak Plantations is reported to be healthy. The question of extending the Velankombai Plantation is under consideration and the area to be planted up has been surveyed and demarcated. The Plantation at Vannathiparai is being extended, but progress of the work was interfered with by an outbreak of plague in the Cumbum Valley. The Blue Gum trees in the Gundan Shola Plantation are thriving well. The *Acacia decurrens* seedlings planted in about 100 acres in the Gundar Valley Extension Reserve were killed by fire during the year.

Tinnevelly.—The Kodamadi Teak Plantation, which is 3½ years old, is getting on well. The plants are over 10 feet high and are now beyond the influence of weeds.

A Teak Plantation of 2 acres in Vadagarai Melpidagai Reserve was thriving excellently, the height growth of the plants being considerably greater than in the Kodamadi Plantation.

One hundred and seventy-seven thousand five hundred and sixty-two Palmyrah nuts were dibbled in in O'Neil Extension series and in Lushington series in Teri Reserve.

(*c*) *Operations for improvement of the growing stock.*

22. The cutting of creepers and climbers affecting standards and other useful trees was carried out in several divisions and felled coupes were fenced by contractors. In *South Arcot division*, crowns of seedlings of valuable species were liberated and the badly shaped trees coppiced in two reserves, and in *West Vellore division*, the hollow and unsound trees were cut back and the inferior species were felled or girdled in the Improvement Felling areas. Weeding was done in the plantations in *North Vellore* and *Tinnevelly.*

Tending operations continued to be undertaken in all the Sandal areas in the Circle. The thinning of *Albizzia Amara* in *Madura* was not carried out, and the experiment has since been ordered to be confined to one coupe only in each of the three ranges of Ayyalur, Sholavandan, and Nattam (Chief Conservator's Proceedings No. 48, dated 18th October 1919)

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V. Exploitation.

(a) *System of management.*

23. The total area under Working-plan during the year was 2,806 square miles and the various sylvicultural systems in force are as set forth below :—

	Area in square miles.	Percentage to the total area under working-plan.
Simple coppice	339	12·08
Selection fellings	372	13·26
Improvement fellings	371	13·22
Coppice with standards	1,185	42·23
Pastoral methods	106	3·78
Forests for which working-plans have been prepared but not subjected to any definite working.	433	15·43
Total ...	2,806	100·00

(b) *Exploitation by departmental agency.*

24. *Sandalwood.*—A comparative statement of the quantity of Sandalwood sold in the Circle and of the average prices realized during the past five years is given below :—

Year.	Quantity in tons of sandalwood sold.	Prices realised.	Average price per ton.
		Rs.	Rs.
1915-16	153	1,28,378	839
1916-17	250	3,56,407	1,426
1917-18	244	4,43,452	1,817
1918-19	214	3,03,635	1,418
1919-20	281	3,94,039	1,402

There appears to be no reason to anticipate any immediate fall in the present high prices. The competition with Australian sandalwood of low oilcontent will probably be felt as regards the considerable quantity of sandalwood consumed in this country in religious ceremonies; but, against this, it may be anticipated that foreign distillers will in future demand considerable quantities of the wood, in view of the high prices of Mysore oil. It has however been reported that the output of oil from Australian sandalwood may hereafter affect the market.

Minor Forest Produce.—Minor Forest Produce was collected departmentally in Mordana and Synagunta reserves of *North Vellore division*, in the interests of general protection, and in parts of Denkanikota and Anchetti Ranges of *North Salem division*, owing to failure to obtain adequate bids for the produce.

The results of the operations were :—

North Vellore.—A sum of Rs. 128 was spent in the collection of 17 maunds of soapnuts, 59½ seers of *Nux Vomica* and 64 seers of Pungam seeds during the year, but the stock has not as yet been sold.

North Salem.—A sum of Rs. 351 was spent in the collection of the following quantities of produce :—

Thagarai (*Cassia tora*) seeds	2,238 Measures.
Gallnuts	343 „
Lichens	74 Quarters.
Pungam (*Pongamia glabra*) seeds	553 Measures.
Tamarind	293 Quarters.
Honey	13 „
Beeswax	4 „
Nux Vomica	2½ Measures.
Soapnuts	9 „
Seekai (*Acacia concinna*)	5 Maunds.

This produce, also, has not as yet been sold.

Hay making.—Departmental operations for the supply of hay to the Military Remount Depot at Hosur were undertaken during the year in *North* and *South Salem divisions*. A quantity of 433 tons of grass was collected and manufactured into 235 tons of hay. The expenditure incurred was Rs. 5,217 and the amount to be paid by the Military Department on account of the hay is Rs. 6,983, of which Rs. 775 was adjusted during the year. *Southern Circle.*

(*c*) *Exploitation by purchasers.*

25. *Timber.*—The quantity of timber removed by purchasers during the year exceeded that removed in the previous year by 1,06,000 cubic feet. As the timber removed is chiefly that which is sold on darkhast lands, the quantity removed fluctuates from year to year. The increase in the year under report is, however, partly due to the sale, in the *Madura* division, of a coupe of 50 acres containing timber trees in Vannathiparai reserve with a view to clearing the ground for the formation of a plantation ; and to the sale of 328 timber trees resulting from thinning operations in Velankombai Plantation of the same division, the value of the timber obtained by these two operations being Rs. 10,720.

Fuel.—The quantity of fuel removed during the year exceeded that removed during the previous year by 2,186,000 cubic feet. The increase is reported to be chiefly due to the leasing out of coupes in arrear of working as per provisions of working plans to the extent of 843 acres in *South Salem division* as against the leasing out of 373 acres of similar coupes in the previous year ; and to the sale in *Madura*, under special sanction, of coupes in advance of the period of their working as laid down in the working-plan to the extent of 570 acres, with a view to increasing the supply of fuel to Madura town ; and to increased outturn from the fuel coupes worked in *Tinnevelly* division.

Bamboos.—The value of the bamboos removed during the year increased by Rs. 7,116, chiefly owing to the leasing out of larger areas in *North Salem division*, the area leased out in that division in 1919–20 being 28,468 acres, as against 22,155 acres leased out in 1918–19, one coupe which in 1918–19 was found unripe for exploitation as provided for in the working-plan having been worked in the year under report, in addition to the coupes allocated for that year.

Grazing.—Of the total area of Reserved Forests and Reserved Lands in the Circle 80·4 per cent was open to the grazing of cattle (exclusive of goats which are entirely prohibited). The incidence of grazing in the several divisions of the Circle is given below :—

District.	Number of cattle in cow units.	Area in acres.	Number of acres per cow unit.
North Vellore	49,619	227,916	4·59
South do.	69,917	241,275	3·45
West do.	54,183	202,880	3·74
South Arcot	21,582	116,480	5·40
North Salem	89,060	491,520	5·52
South do.	57,033	350,720	6·15
Trichinopoly	51,257	165,760	3·23
Madura	62,146	371,840	5·98
Tinnevelly	20,059	56,320	2·81
Total ..	474,856	2,224,711	4·68

(1 buffalo = 2 cows = 4 sheep.)

The number of cattle grazed during the year shows a reduction of 18,308 cow units, as compared with that of the previous year, while the area open to grazing increased by 133,175 acres, chiefly owing to the opening of areas hitherto closed on the Pachamalais of *Trichinopoly division*, and in *South Salem division*, the net result being that the average incidence of grazing fell from 4·24 acres per cow unit in the previous year to 4·68 acres per cow unit in the year under report.

The total number of animals licensed to graze on payment was 542,616 against 551,994 in the previous year.

The revenue derived from grazing was Rs. 2,19,790 against Rs. 2,10,887 in the previous year. The increase is chiefly contributed by *North Vellore*, *North Salem*, *Trichinopoly*, and *Madura*. The increase in *North Vellore* is attributed to the stimulation of permit sales by the introduction of a system of selling permits to permit

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issuing officers for outright cash payment, in *North Salem* and *Madura* to the enhancement of grazing fees, and in *Trichinopoly* to the opening to grazing of areas hitherto closed in the reserves of the Pachamalais.

Minor produce.—The value of minor produce leased out increased by Rs. 31,971 during the year chiefly on account of the high prices paid for tan-stuffs subsequent to the withdrawal of control.

One of the bark contractors in this circle represented during the year that owing to a sudden increase in the practice of exporting hides and skins in an untanned state, the market for tanning barks had seriously fallen, and requested remission of a portion of the lease amount on account thereof. The matter was investigated, a reference being made to the Chamber of Commerce and to the Collector of Customs, Madras. The replies of these officers showed that the contractor's statements were incorrect. On the representation of some of the contractors of the Northern and Central Circles, as regards their losses by speculation in the tanning-bark trade, some concession was granted to all contractors affected, as a matter of grace.

(d) Exploitation by right-holders.

26. The rights admitted at Settlement, viz., free grazing and free removal of thatch grass in Palamalai extension and V. Kanapadi extension reserves in the Musiri Range and Gundur and Ariyur Shola blocks in the Namakkal Range of the *Trichinopoly* division were availed of, as usual.

(e) Exploitation by free grantees.

27. The estimated value of free grants was Rs. 7,634 against Rs. 10,079 in the previous year. The free grants were chiefly for reconstructing houses destroyed by fire.

CHAPTER III.—FINANCIAL RESULTS.

28. The following statement compares the financial results of the year under report with that of the previous year and the average of the preceding quinquennium :—

—	1919-20.	1918-19.	Average of the preceding five years.
	Rs.	Rs.	Rs.
Revenue	15,98,334	14,22,218	12,61,540
Expenditure.			
A.—Conservancy and Works (including refunds).	3,66,389	3,13,979	2,57,691
B.—Establishment	4,63,237	4,32,134	4,02,365
Total expenditure ..	8,29,626	7,46,113	6,60,056
Surplus ..	7,68,708	6,76,105	7,01,484

The gross receipts and expenditure during the year increased by Rs. 1,76,116 and 83,513 respectively, as compared with those of last year. The net surplus also shows an increase of Rs. 92,603 over that of the previous year. The increase in revenue is chiefly due to the realization of abnormally high prices for tan stuffs during the year, owing to speculation on the part of contractors. In the previous year the revenue on this account was in the first instance credited to the Military Department, from whom credit was received only for the average amount realized during the five years previous to the war.

49·48 per cent of the total revenue was realized from major produce ; 43·37 per cent from minor produce; and 7·15 per cent from miscellaneous items. Of the expenditure, 6·22 per cent was directed towards exploitation ; 13·23 per cent towards the upkeep and improvement of forests ; and 50 55 per cent towards establishment and miscellaneous items. The proportion of net to gross revenue increased slightly to 48·1 per cent during the year, from 47·5 per cent during the previous year.

RECEIPTS.

The important variations between the actuals of the year under report and those of the preceding year are explained below :

(i) *By departmental agency.*

Sandalwood. + Rs. 68,909.—The increase is due to the sale of a larger quantity of sandalwood than in the previous year, by about 54 tons. *Southern Circle.*

Minor produce. —Rs. 11,394.—The decrease is due to the fact that hay-making operations were stopped in *North Vellore* and that the revenue, on account of hay supplied to the Military Remount Depot at Hosur from *North* and *South Salem* divisions during the year, was not fully adjusted.

(ii) *By purchasers.*

Timber. + Rs. 29,247.—The reason for the increase has already been explained in paragraph 25 *supra.*

Fuel — Rs. 62,384.—The decrease occurs chiefly in *South Arcot* where the sales of land and growth of reserves to be disafforested were not confirmed pending further consideration, whereas in the previous year much revenue was realized from this source.

Grazing. + Rs. 8,903.

Minor produce. + Rs. 1,15,965.

The reason for the increase has been explained in paragraph 25 *supra.*

(iii) *Miscellaneous (including confiscated drift and waif-wood).*

+ Rs. 28,646	III.	+ Rs. 351.
	V. (*a*)	+ Rs. 15,998.
	(*b*)	+ Rs. 12,297.
	Total	+ Rs. 28,646.

V (*a*).—The increase of Rs. 15,998 is due to the realization of a larger amount of compounding fees, chiefly owing to increase in the number of offences.

V (*b*).—The increase of Rs. 12,297 is due to the crediting of a large amount in *South Arcot* to this head for want of particulars by the Treasury officers who received the money from parties dealing with the Department.

EXPENDITURE.

A. Conservancy and Works.

The expenditure during the year increased by Rs. 52,410 over that of the previous year and is chiefly owing to the extension of operations by the Forest Engineer under A VII (a); and to the debiting of the amount paid as compensation for the acquisition of the Tirumalavadi mittah forests in *North Salem* division.

B. Establishment.

The expenditure on Establishment increased by Rs. 31,103 due chiefly to the re-organization of the subordinate forest staff, and to the grant of increased temporary local allowances.

CHAPTER IV.—RESEARCH AND EXPERIMENTS.

29. *Sandal.*—Experiments were continued in various directions with a view to ascertaining the cause of spike in sandal. They tend to show that sandal is not an obligatory root-parasite, that seeds from spiked sandal trees will produce healthy seedlings, and that spike cannot be produced by injecting the trunks of healthy-trees with sulphuric acid.

Observations as to the spread of spike in the Special Observation Areas of *North Salem division* were conducted from 12th April 1919 to 10th April 1920 by Ranger L. R. Narayana Ayyar, and from 10th April 1920, on which date Ranger L. R. Narayana Ayyar went on leave, by Ranger P. A. Krishnaswami Mudaliyar. The last-named Ranger showed powers of observation and submitted reports of considerable interest. The writer of this report has carefully studied the correspondence on the subject of spike in the Circle office, as well as the diaries and reports of Ranger P. A. Krishnaswami Mudaliar, and has come to the conclusion that, since orthodox methods of regarding the spike problem have failed to yield any useful

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result, it would not be amiss if some heterodox theory were considered. And ventures therefore to put forward the suggestion that the sandal tree, having found by experience that it can obtain nourishment at the expense of other plants, has gone too far in this direction, and has had the tables turned on it by the numerous hosts which it is now in the habit of excessively attacking. Clear-felling of trees other than sandal in spiked localities would, if this theory were correct, tend to aggravate the evil; and such action might, indeed, even start an attack of spike in unspiked localities; since the coppicing of the hosts would throw an additional strain on the parasite or the coppicing of the parasites would throw an additional strain on the host, whichever way one cares to put it. While uprooting the growth other than sandal would be as unlikely to actually cure spike (manifest or latent) as would the removal of a consumptive animal from the surroundings which gave rise to its consumption be likely to effect a cure. In both cases, the constitution of the organism would, in all probability, be upset beyond the power of recovery.

If such a theory as that put forward were correct, one might expect the effects of the involved disturbance of the system of equilibrium of combat to spread along the interconnected root-systems more or less slowly, in an apparently undetermined direction. And such theory might eventually be proved (or disproved) by digging trenches entirely encircling certain observation areas at various distances from a given spiked area, and in various directions relative to it, at the same time completely eradicating (and not merely cutting down) all tree and shrub growth other than sandal within such observation areas. Such of the areas so treated as had from the beginning been free from latent disease would escape contagion, and would gradually appear as healthy islands in a surrounding sea of spiked forest.

The undersigned considers it right to state that Ranger, Mr. P. A. Krishnaswami Mudaliar, is to be absolved from any responsibility for the suggestion put forward—a suggestion which is heterodox, in so far as it implies that the Sandal has in the past succeeded in propagating itself in the direction of unfitness and in modifying its habits contra environment. And it should also be emphasized that the theory is not a blind guess. There are indications that it may be the true one. Hitherto experiments have been undertaken to ascertain whether sandal trees deprived of their 'hosts' would develop spike. It is now time to ascertain whether sandal trees deprived of their 'hosts' will not, in fact, be immune from spike. But it is necessary to guard against being misled by the appearence of disease which was latent before the 'hosts' were destroyed, since, if the theory is correct, it will not necessarily imply that the destruction of the 'hosts' will cure a tree either manifestly or latently suffering from spike.

Note.—The above was written as a rough draft before the writer of this report had read the Article in the September Number of "The Indian Forester," written by Mr. P. S. Jivanna Rao, and entitled "The Cause of Spike in Sandal," and has not subsequently been modified in any way. To some extent, the suggestions put forward by the undersigned appear to tally with the conclusions arrived at by Mr. Jivanna Rao. But they do not altogether tally. It may be suggested that Mr. Jivanna Rao is not, perhaps, sufficiently acquainted with the results of the experiments that have been conducted to ascertain the effect of severing the connexion between the roots of the sandal and the roots of its hosts, by digging trenches entirely surrounding certain Sandalwood trees. The results of these experiments have been to indicate that it is impossible to cause the occurrence of spike in a healthy Sandal tree by such trenching. The inference therefore is that simple failure (as apart from reversed action) of the mechanism of supply from the host to the Sandal would not cause spike. Whereas, Mr. Jivanna Rao, in paragraph 6 of his article appears to suggest that this is ultimately the manner in which spike is caused. It is of some interest to note that Mr. Jivanna Rao adopts MacDougal's suggestion that the "evolutionary movement is generally towards increased dependency of the parasite, accompanied by accentuated and more complete atrophies. The view that such a movement may sometimes ultimately lead to extinction, although by a long and indistinct way seems also justifiable by inference." This, of course, tallies with the suggestion of the undersigned that "the Sandal has, in the past, succeeded in propagating itself in the direction of unfitness." In the Article on "Parasitism" in the Ninth Edition of the Encyclopædia Britannica, it is stated that a vegetable

parasite " frequently commits suicide as it were," the argument being, however, that both host and parasite fall together. It seems probable that in the case of Sandal, while some of the hosts fall with the parasite, others survive by destroying the parasite. But, however this may be, it would be as well to attempt to prevent spike by destroying, where Sandal grows, all growth other than Sandal. It is quite possible that the degenerate tendency of the species would continue for some time, the trees parasitising upon one another, and only the strongest of them surviving, but the question as to the number of generations of seed which might be required to produce nonparasitic Sandal is one which is best left to the Mendelian specialist. It is possible that, within a comparatively short time, the desired result would be obtained, provided only that the Sandal were not given the slightest opportunity of cultivating its peculiar weakness. *Southern Circle.*

The general conclusion reached by the authors quoted in paragraph 4 of Mr. Jivanna Rao's Article is undoubtedly against the possibility of the correctness of the theory now put forward. Messrs. MacDougal and Cannon appear to be fortunately situated in their ability to state that it is " obvious that any plant (host) would soon free itself from a dependent (parasite) which did not follow it in its extreme concentration, thus entailing, of course, the power of automatic adjustment in the osmotic activity of the dependent " To the writer of this note, the vital processes of plants in their more intimate aspects appear to be rarely ' obvious ' and matters ' of course '. For the rest, it may be noted that the sentence, as quoted, appears to be incomplete. It is suggested that the opinion of Messrs MacDougal and Cannon need not altogether deter us from making the experiment suggested above.

The wording of the suggestions set forth above this note might in several respects have been altered for the better, but the matter has been purposely left unaltered subsequent to the perusal of Mr. Jivanna Rao's article.

It would be of little practical interest to enter into any discussion as to the reason for the continued existence of the sandal, if it really has a tendency which can only adequately be described by the word " suicidal, " as it is improbable that we possess sufficient data to support an argument in the matter.

In conclusion, the undersigned would wish to emphasize that it now appears sufficiently certain that spike is not an infectious disease, as, upon insufficient evidence, it has been asserted to be. On this point he is entirely in agreement with Messrs. Hole and Jivanna Rao.

Other Experiments.

30. The District Forest Officer, Tinnevelly, reported that the coating of the seeds of *Balanocarpus utilis* with red lead has had a useful effect in preserving the seeds from ravage by pigs, and that the result has been observable in the degree of success obtained in artificial reproduction of this species by sowing. The same District Forest Officer also reports that reproduction by the planting of cuttings has been tried in the case of *Hopea parviflora*, *Balanocarpus utilis*, *Dalbergia latifolia*, *Gluta travancorica*, *Anogeissus latifolia*, *Mesua ferrea*, *Vitex altissima*, *Aglaia Roxburghianna*, *Schleichera trijuga*, *Tectona grandis*, *Pterospermum marsupium*, *Albizzia Lebbek*, *Albizzia odoratissima*, *Chloroxylon swietenia*, *Eugenia jambolana*, *Melia Azadirachta* and *Adina cordifolia*, and has proved unsuccessful. And that transplantation of natural reproduction seedlings of *Eugenia Jambolana* has been found to yield about 50 per cent of success.

Apart from the above, none of the District Forest Officers report anything which appears to be worth recording in the way of definite observations yielded by research or experiment.

CHAPTER V.—ADMINISTRATION.

31. During the year under report, the re-organization of the executive and protective staff was sanctioned; and was brought into effect on 1st October 1919 (in accordance with the Chief Conservator's Proceedings No. 33, dated 11th September 1919).

32. *Tours.*—All the District Forest officers, except *West Vellore*, *North Salem*, *South Salem*, and *Tinnevelly*, spent in camp more than the minimum period prescribed. The reason for the short tourings by the above four District Forest officers is due either to change of officers in the Division charge or to ill-health.

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33. *Inspections—By Conservator—Office.* All the offices except *Trichinopoly*, *Madura* and *Tinnevelly*, were inspected during the year. The results are :—

South Arcot. *South Vellore.*	Satisfactory.
North Vellore. *West Vellore.*	Fairly satisfactory.
North Salem. *South Salem.*	Unsatisfactory.

Forests.—Mr. Latham inspected some of the Forests of *Salem West range* in *North Salem division* in September 1919. The Forests of *Ayyalur*, *Sholavandan*, and *Nattam ranges* of *Madura division* were inspected by Mr. Latham in August and September 1919, and the notes were embodied in the Chief Conservator's Proceedings No. 48, dated 18th October 1919. The forests of *West Vellore division* were inspected by Mr. Latham and the inspection notes were embodied in the Chief Conservator's Proceedings No. 4, dated 22nd January 1920.

By District Forest Officers.—All the Range offices and sale depots, except the sandalwood depot at *Vellore*, were inspected by the District Forest officers concerned.

34. *List of offices audited*—All the offices, except *Tinnevelly*, are reported to have been inspected by the Assistant Inspector of Local Fund Accounts, during the year under report.

35. *Vernacular Training school.*—The school was located in *North Salem division* and conducted by M.R.Ry. C. M. Belliappa, as Senior Instructor, for a short period at the beginning of the session, and by M.R.Ry. A. K. Kandan during the remaining part of the session. M.R.Ry. T. Kesavalu Nayudu was the Assistant Instrutor. Twenty-five students underwent training.

36. *Health of the establishment, including an account of measures of sanitation and casualties.*—(*a*) The health of establishment is reported to be generally good except in specially unhealthy localities and *South Vellore*, *West Vellore*, *North Salem*, *South Salem*, and *Trichinopoly divisions.* During the year, special attention has been given to a fair apportionment among the Executive staff of service in unhealthy localities. Attention has also been paid to the feasibility of adopting special measures for protection from fever of subordinates serving in such unhealthy localities as the *Javadis*, *Pachamalais*, *Chitteris* and *Kollimalais*.

(*b*) *Sanitation.*—No special attention is reported by District Forest officers to have been paid to sanitation during the year.

(*c*) *Casualties.*—One forester, two guards, two watchers, one range clerk, and three peons died of malaria; two guards are reported to have died of "Javadi fever" and one watcher died of cholera.

CHAPTER VI.—GENERAL.

37. (1) *Formation and management of panchayats (to include Forest Village system).*

(*a*) *Formation and Management of Panchayats.*

Formation.—During the year under report six panchayats were newly formed; one in *North Vellore*, two in *South Arcot*, three in *South Salem.*

Management—District Forest officers of *North Vellore*, *South Arcot*, and *South Salem*, have reported that the working of the panchayat is not satisfactory. The other District Forest officers have not reported in the matter. In the reviews received from the Collectors of *Tinnevelly* and *Madura*, it is reported that the working of the panchayats in these districts is satisfactory.

During the year, a special officer was appointed to investigate the problems connected with the development of forest panchayats. He visited some of the divisions of this Circle, and his notes are awaited.

(*b*) *Forest Village System.*

The Forest village system sanctioned in Government Order No. 1122, Revenue, dated 5th June 1919 for *Tiruvannamalai range*, in *South Vellore division*, was introduced during the year and a revision of the scheme was also sanctioned in Chief Conservator's Proceedings No. 240, dated 27th June 1920. The system is reported to be working in a fairly satisfactory manner.

38. (2) *Measures for improving local supplies and facilities (includes water-supply, fuel, manure leaves*, etc.). *Southern Circle.*

(*a*) *Improvement of water-supply in State Forests.*—The following abstract shows the progress made in this direction during the year (fully noted in accordance with Board's Proceedings, Forest Nos. 7, dated 12th January 1914, and 125, dated 29th June 1914).

North Vellore.—One tank was repaired at a cost of Rs. 2.

South Vellore.—Laying of pipes and the installation of a pump for the bore-well at Mandaparai was completed during the year, and the work is reported to have been satisfactorily executed. The expenditure incurred during the year was Rs. 632.

Bore-hole at Veerappanur.—The installation is not yet in working order. The pipes have been laid and the pump has been set up. Steps are reported to have been taken to put the installation in working order. The expenditure incurred during the year was Rs. 679.

Patrakad.—A trial bore-hole was sunk here in an existing well by the side of a stream, and a pipe lining is being driven into the hole. The work is in progress. The expenditure incurred during the year was Rs. 112.

West Vellore.—Articles required for fitting up the tube-well at Kavalur near Naikaneri were collected, but no further progress was made during the year under report.

Boring operation at Kuttathur.—Seven bore-holes were made and all of them had to be abandoned on account of hardness of the rock. The boring work was therefore stopped.

It was suggested by this office that one or two foresters should be sent to the Agricultural College, Bombay, for training in the use of Mansfield's water finder, as much work has been done with the instrument by the staff of the College, who have found that a good deal of practice and experience is required to use the instrument satisfactorily ; and that the same foresters should be subsequently trained in the use of tube-well driving apparatus and in the fitting of tube-wells with pumps. The Agricultural College have notified their willingness to train the foresters ; and various engineering firms have quoted prices for the supply of the required boring apparatus and pumps. The matter is still under correspondence.

South Salem.—Thirty bunds on hill slopes were constructed at a cost of Rs. 15.

Trichinopoly.—Four bunds were constructed at a cost of Rs. 15 and one tank was repaired at a cost of Rs. 2. This bunding work will, in future, be carried out only in cases where there is specific reason to expect that it will yield good results, as ordered in Chief Conservator's No. 330, Miscellaneous, dated 2nd June 1919, which appears to have been overlooked by the District Forest officers of the above two divisions.

39. (*b*) *The supply of Forest produce to meet the wants of the people* was generally attended to by coupe contractors in accordance with the terms of agreements executed by them. The District Forest officers of *North* and *South Vellore* refer to certain efforts in this direction which are being made under the aegis of the Assistant Registrar of Co-operative Societies. The result of these efforts may be awaited. Difficulty was encountered during the year in railing fuel into *Madura*, owing to the shortage of waggons.

40. (*c*) The opening of coupes to be worked entirely for the supply of leaf-manure, as an experimental measure, was inaugurated during the year in Atur taluk of *South Salem division*, one coupe of 73 acres being selected in Pattimedu reserve and another coupe of 30 acres in Jadayagounden reserve.

41. (3) *Timber and sandalwood transit rules.*—There was no change in these during the year under report.

42. (4) *Jungle tribes.*—The Malayalees of the Javadi Plateau were allowed the following concessions, in continuation of the policy laid down in Board's Proceedings (Forest) No. 173, dated 14th December 1915 :—

(1) Exclusive right to graze their cattle other than goats over the reserves and unreserves, within their respective village limits on payment of a lump sum assessment based on a triennial census ;

Southern Circle.

(2) Refund of the assessment so collected in whole or in part, proportionately as the protection of sandal on the plateau during the year is found to have been successful or otherwise;

(3) Grant of money-rewards at the end of each year for protection of reserves and unreserves from fire, the amount of the reward varying according to the degree of success in protection.

In *South Vellore*, the system is reported to have worked well. In *West Vellore*, it is reported that the Malayalees of the Tirupattur Javadis refused to come under the village system. The matter is still under correspondence.

In accordance with the policy laid down in Board's Proceedings (Forest) Nos. 21, dated 23rd February 1915, and 142, dated 6th October 1915, the Malayalees of the Chitteri Forests of *South Salem division* were allowed free grazing of cattle and sheep for good protection on similar lines to those of the arrangements with the Malayalees of the Javadis as referred to above.

43. (5) *Mining and Quarrying.*—Nil.

44. (6) *Live stock.*—There is no live stock in this circle.

45. (7) *Veterinary Establishment.*—Nil.

46. (8) *Civil Suits.—South Salem.*—The appeal against the judgment in the law suit between the department and the Mittadar of Sekkadipatti regarding the ownership of a portion of Neyyamalai Hill adjoining Pungamaduvu reserve remained pending settlement during the year. The appeal has since been decided in favour of the Mittadar.

47. (9) *Control of unreserved lands by the Forest Department.*—The Land Revenue administration of the Javadi Hill villages was entrusted to the District Forest officer, *West Vellore*, in Government Order No. 116, Revenue, dated 16th January 1917. The work of delimitation of these villages, which was commenced by this department in 1918, was completed during the year. The Land Revenue collection during the year was Rs. 4,140-14-2 against Rs. 3,636-7-1 (the latest figure furnished by the District Forest officer) of the previous year. The Government in their order quoted above called for a report on the working of the system after two years. A report was accordingly submitted by the District Forest Officer during the year under report and is pending the issue of orders. The Collector has recommended that the system should be tried for another year.

The unreserves on the Pachamalais and Kollimalais are still under the control of the Forest Department.

The tank-bed coupes of Tinnevelly have all been felled, and control of the tank-beds will now be handed over to the Revenue Department.

B. F. RIGOLD,
Acting Conservator of Forests, Southern Circle.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

FOREST YEAR ENDING 30TH JUNE 1920.

WESTERN CIRCLE.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. ALTERATIONS IN AREA.

1. *Reserved forests.*—The change in area is unimportant. About 2 square miles were added, mostly in the *Nilgiri* district. *Western Circle.*

2 *Reserved lands.*—The change in area corresponds with that under reserved forests, the areas having been transferred to the latter.

2. FOREST SETTLEMENT.

3. The Rangaswami Peak Reserve in *Nilgiri* district was finally settled during the year as well as three small extensions to existing reserves in the *North Mangalore* and *Central Coimbatore* Divisions and some enclosures in the *North Coimbatore* division.

The settlement of the Mudumalai reserve notified under section 4 in the previous year was taken up during the year under review but not completed.

3. DEMARCATION.

4. About 36 miles of new boundaries were cleared. Of these ten were in the *North Malabar* division where a little over two miles remain for cutting.

In *Kollegal* division 12 miles of new boundaries were demarcated, leaving 210 miles still to be done.

Twelve miles of new lines were cleared in *North Coimbatore*, leaving 100 miles still to be dealt with. Lockspitting of boundaries has now ceased in this division, as the results of such demarcation are not commensurate with the cost and the labour difficulties involved.

5. In addition 46 miles of the new division line between the *Nilgiri* and *Central Coimbatore* divisions were demarcated and two miles of the boundary demarcating an area of reserved forest handed over to the Cinchona Department in the *Nilgiri* division.

6. No new method of demarcation was introduced. The usual reclearing of boundaries was effected by subordinates.

7. The total length of boundaries remaining to be demarcated is 416 miles. The work must be pushed on. Most of this length lies in the *Kollegal* and *North Coimbatore* divisions, but lesser lengths have still to be cleared in all the other divisions of the Circle except *North Mangalore* and *South Coimbatore*. In two of these divisions no work was done during the year though demarcation is incomplete.

4. FOREST SURVEYS.

8. (*a*) There was no forest survey by the *Survey of India* Department.

9. (*b*) *Local Surveys.*—The local forest officers and draftsmen surveyed the year's coupes, regeneration areas and minor work of a like nature.

10. (*c*) *Reference maps* are reported to have been maintained and posted up to date in all divisions.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. Regulations of Management.

(a) Preparation and control of regular working-plans.

Western Circle.

11. In *North Mangalore* no new plan was made. Revision of old plans is pending the appointment of a special officer when one can be spared.

12. Three plans for the management of areas in *South Mangalore* were submitted, but none have been sanctioned as they dealt with small areas, whereas there is a wide tract of forest land awaiting regularised working. It has been decided to await the preparation of a comprehensive scheme for the whole tract. This will be taken up as soon as possible, but, as elsewhere, the shortage of officers stands in the way.

13. In *North Malabar* the revision of the Begur working plan submitted during the past year has yet to be carried out.

The Chedleth working plan began in the past year and abandoned for lack of a special staff is still awaiting completion for the same reason.

14. The new working plan for the Nilambur plantation in *South Malabar* has not yet been sanctioned as it is still awaiting the supply of maps and appendices. The only area now awaiting the preparation of a working plan is the Silent valley; but much preliminary investigations will be necessary.

15. In the *Nilgiri* district no new plans have been prepared.

It is reported that the plan for the Mudumalai forests requires revision as the prescriptions devised for the encouragement of regeneration have not produced the expected results.

16. No new plans were prepared in the *Kollegal* division, but instructions were issued for the revision of that for the Araipalayam Working Circle. Only minor schemes are required in this division as there is at present little scope for development. The forests are remote and contain little valuable timber. The quantity of sandalwood is increasing, but as it is still comparatively young and as spike disease is prevalent, no regular working plan is likely to be of much use.

17. The working plan for the Bhavani fuel areas in the *North Coimbatore* division was not approved.

The proposal to start teak plantations in the Kavalur valley has also been rejected as impracticable and the plan prepared, therefore, has been shelved.

The working plan for the fuel areas in the Velamundi reserve requires revision and this is pending with the District Forest Officer.

The sandalwood working plans for this division have lapsed, but in view of the disturbing element introduced by the prevalence of "spike" it will not serve a useful purpose to introduce new plans at the present time.

18. No new plans were prepared in the *Central Coimbatore* division. The preparation of a plan for the Chenath Nair reserve should await the results of the working of the evergreen forest and the regeneration operations started during the year. In the meantime a stock map will be prepared showing the areas which will fall under the different classes of working.

The Walaiyar working plan will lapse at the close of the current year and therefore requires revision. An officer has been placed on special duty to conduct valuation surveys and prepare stock maps, and it is hoped to have the plan ready to start work in 1921–22.

The Chinnar working plan is still awaiting revision.

19. No new plans were prepared in the *South Coimbatore division.* Working under the new Mount Stuart working plan was begun, but the prescriptions cannot be carried out in full until provision has been made for the housing and general improvement in the conditions of the labour, until which time a sufficient labour force cannot be expected.

The working plan for the working of the fuel areas on the outer slopes of the Anaimalais is in need of revision. Pending complete revision the summary of prescriptions was revised for the Udamalpet Range and this was sanctioned during the

year. A similar revision was sanctioned for the Ayanangal Working Circle in the Pollachi Range. The chief alteration consists in working these areas as simple coppice instead of coppice with standards. *Western Circle.*

20. This latter is a much needed reform that was ordered to be applied during the year to all other similar areas in the Circle wherever possible.

2. Communications and Buildings.

(a) *Roads and Bridges.*

21. Though the length of new communications constructed during the year is precisely the same, viz., 61 miles two furlongs, the cost is more than double (Rs. 33,400 against Rs. 13,900). This is due to far more important work being undertaken during the year, especially in the *Central Coimbatore* division, and also to the all-round rise in prices.

22. The most important works were—

In the *Nilgiri* district one mile of an important export road was completed at a cost of Rs. 3,300.

In *North Coimbatore*, the construction of a road from Geddasal up the slopes leading to the Minchiguli valley for $2\frac{1}{2}$ miles with a maximum gradient of 1 in 14 was under construction and was completed soon after the close of the year.

In *Central Coimbatore*, in connection with the scheme for working the evergreen forests of the Chenath Nair Reserve, the Dhoni-Olavakode road was begun. This necessitated a certain amount of acquisition. A thoroughly sound road with permanent bridges and culverts is under construction over a length of 5 miles. About 1 mile was completed during the year and considerable progress had been made over the next three miles.

In connexion with this same scheme drag paths and slides over an aggregate distance of about $1\frac{1}{4}$ miles were under construction.

These works were under the supervision of the Forest Utilization Officer.

In *South Coimbatore*, no actual new construction was undertaken but the investigation of the New Mount Stuart Ghat Road was carried out by the Forest Engineer.

The alignment is nearly completed and the estimates are expected to be completed before the close of the current calendar year.

The proposal for the construction of a steam tramway in the Tekkadi forests was finally abandoned in favour of a scheme of good metalled roads, as the growing stock would not justify the former more elaborate system of transport.

23. The Bullock Tramway in *South Coimbatore* was utilised during the year, but, owing to disease among the Government cattle and to the bad state of the line, the work done during the year was less than in the previous year. No useful statement of profit and loss can be made since any figures for cart transport could only be guess work. The fact remains that the tram line is at present the only line of communication between the coupes worked and the beginning of the carting road to the plains.

The state of the tram line is such that it is impossible to utilise the animals to proper advantage. The present District Forest Officer (Mr. J. S. Scot) is taking great interest in this matter, and as the tram line must be our line of export for at least three years and probably for much longer, it is proposed to improve it very considerably during 1920–21. Some improvement has already been effected by clearing growth on either side of the line which prevented the rapid drying of the ground after rain.

24. (*b*) *Rivers.*—It is very desirable that the lines of transport offered by the rivers of the West Coast should be utilised. Floating is practised on the Nilambur river in *South Malabar*, but there are obstructions which hinder the free passage of rafts. Plans and estimates for the training of the stream over these reaches have been prepared, but there are riverain rights that preclude the work being carried out until the rightholder's consent has been obtained.

Plans and estimates have been prepared for similar work on the Paishwani river in *South Mangalore*, and it is hoped that the work will be carried out in 1920–21 or at least begun then by the Public Works Department.

(*b*) *Buildings.*

Western Circle.

25. The total expenditure on new buildings was more than double that of the previous year. This is due in great part to the large increase in the cost of labour and materials. For the same reason mainly the cost of maintenance has risen by over 50 per cent.

The expenditure for the most part is on minor buildings such as subordinates' quarters and the like. The most important new buildings were—

(1) Part construction of a circuit house at Nilambur, *South Malabar.*
(2) Combined subordinates' quarters and office at Masnigudi, *Nilgiri district.*
(3) Rest-house at Cowdalli, *Kollegal district.*

(*c*) *Miscellaneous works.*

26. Under this head also the expenditure has more than doubled and the increase is in part to be ascribed to the rise in prices.

The expenditure was almost entirely on the sinking and consolidation of wells. The one exception of importance was the clearing of a wide belt of land of all growth around the rest-house at Geddaesal in *North Coimbatore*, as an anti-malarial measure. Similar work was undertaken around the Mount Stuart Settlement in the *South Coimbatore* district, but most of the expenditure was incurred after the close of the year, and moreover, in this instance, the operation is likely to prove directly remunerative as many timber trees had to be felled.

In the same locality considerable sums were spent on the sinking of wells, besides a sum of Rs. 400 by way of fee to a water-finder who located favourable sites. These sites have since been confirmed by Forest Officers who have found themselves possessed of similar water-finding powers, though they have arrived at rather greater depths. The latter estimates are presumably nearer the truth since in no case had the borings come through solid, hard rock, tapped permanent water when work ceased owing to the advent of the monsoon even where the professional water-finder's estimated depth had been reached.

27. *Telephones.*—The telephone at Mount Stuart in *South Coimbatore* is reported to have been out of order at frequent intervals. It would be more satisfactory if the subordinate in charge of the line were under some immediate and constant supervision. A new line was constructed and opened for use in March in the *South Malabar* division to a length of 17 miles.

This line places the District Forest Officer in direct communication with important centres at Nedungayam, Padukai and Mundayanthodu Mukku and is of very great use in connexion with the working of the Timber Transit Rules and elephant capturing operations.

3. Protection of Forests.

(*a*) *General Protection.*

28. The total number of cases has risen from 3,092 to 3,457 ; the increase is distributed over the several kinds of offences.

There is a decrease in the number of cases reported in three of the nine divisions, viz. :—

				PER CENT.
North Mangalore	581	against	643	9· 6
South Malabar	75	„	160	53· 1
Nilgiris	192	„	207	7·25

In the other divisions there is a more or less marked increase as follows :—

				PER CENT.
South Mangalore	551	against	470	17·2
North Malabar	28	„	22	27·4
Kollegal	315	„	173	82 0
North Coimbatore	598	„	507	18·0
Central Coimbatore	419	„	293	43·0
South Coimbatore	310	„	304	2·0

29. It is difficult to arrive at any definite conclusion as to the causes underlying fluctuation since the District reports give the same reasons for opposite results. Generally speaking, the decrease or increase is attributed to better control and to

increase in establishment. But that the District Forest Officer's conclusions are not always based on sufficient consideration is shown by the arguments of one officer who writes the increase in the number of cases of unauthorized grazing "*may be* due to the fact that normal rates of grazing fees were enhanced from 4 annas to 8 annas per cow or bull, 8 annas to Re. 1 per buffalo, and 2 to 4 annas per sheep, and consequently people were tempted to take to the forest unlicensed cattle with those licensed". *Western Circle.*

A scrutiny of the actual figures, however, reveals the fact that the rates and number of cattle for which permits were taken out are as shown in the appended statement:—

Kind of animals.	1918-19.		1919-20.	
	Rate per head.	Number.	Rate per head.	Number.
	Rs. A. P.		Rs. A. P.	
Buffaloes	0 8 0	1,708	0 8 0	19
Do.	1 0 0	722	1 0 0	5,416
Do.	1 8 0	554	..	..
Do.	2 0 0	389	..	..
Do.	2 8 0	1,530	..	..
Total ..	..	4,903	..	5,435
Cows and bulls	0 4 0	15,379	0 4 0	342
Do.	0 8 0	20,776	0 8 0	74,150
Do.	0 12 0	13,714	.	..
Do.	1 0 0	5,848	..	..
Do.	1 4 0	14,669	..	..
Total ..	..	70,386	..	74,492
Sheep	0 2 0	1,280	0 2 0	114
Do.	0 4 0	13,509	0 4 0	24,369
Do.	0 6 0	2,171	..	..
Do.	0 8 0	578	..	..
Do.	0 10 0	1,727	..	..
Total ..	..	19,265	..	24,483

30. The decrease in cases in *South Malabar* occurred almost entirely under the head of unauthorized grazing. It is explained as being due to the young plantations being now remote from the villages. It is only in young plantations that there is much grazing. As soon as a plantation grows up and forms a complete canopy the growth of grass is strangled and there is little to invite cattle to trespass. There is an actual slight improvement.

31. There is no doubt that, in some districts at least, the recent reorganization and increase in staff is already being effective. In *Kollegal*, for instance, patrol gangs have been started which were not practicable before and the increase in cases in that division can be attributed very largely to that cause.

I am quite convinced that there has been a marked improvement in the 'morale' of the lower Forest Service of late years: it is very probably due in part to the training inculcated at the Vernacular Training Schools.

32. The number of cases compounded has somewhat fallen, but the aggregate of compounding fees collected has risen. This rise is due entirely to the heavy compounding fees realized in two sandalwood cases in the *Central Coimbatore* division which were compounded respectively for Rs. 5,000 and Rs. 2,000.

Rewards to informers amounting to Rs. 138 were awarded in three divisions.

(*b*) *Protection from fire.*

33. *Special Protection.*—Experimentally some 20,000 acres of the outer slopes of the Talamalai and Satyamangalam Ranges of *North Coimbatore* district, mostly grassy areas with scattered trees, were intentionally burnt early in the year. It is reported that this measure was successful in reducing fires in the areas under general or no protection, but had little influence on the area under special protection. The benefit, however, must be considered not only in so for as it prevents fires from

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entering other areas but also as regards the area itself, for a fire early in the season will do far less harm than if the area were burnt over later on when everything is dry.

In the *Nilgiri district* the outer fire lines of the Mudumalai Working Circle were converted from covered to open lines; it is too early to judge of results.

Apart from these two instances the system of fire protection remained unchanged.

34. The area shown as attempted to be protected was less than in the previous year by 11,000 acres. This decrease is only apparent and not actual since it is due to correction of figures. In past years the whole area of the fuel Working Circles of *Central Coimbatore* was shown as under special protection, whereas only the worked coupes were protected; this error has now been rectified.

The total cost fell from Rs. 30,205 to Rs. 28,420. The decrease also took place in the *Central Coimbatore* Division and has not been clearly explained by the District Forest Officer.

35. The results of fire protection for the Circle as a whole were bad. Sixty-five thousand nine hundred and forty acres under special protection were burnt over as against 13,412 in the previous year. Nearly the whole of this increase occurred in the *North Malabar* (30,050 acres against 974) and the *Nilgiri district* (31,543 against 2,503). Disastrous fires occurred in these two districts, most of which are stated to have crossed outer boundaries. In the Nilgiri District it is reported that rains up to the end of January and mists to an even later date prevented the thorough fire tracing of these lines in good time. A sudden dry period ensued and caused the grass to dry rapidly. For want of labour the fire tracing thereafter progressed slowly, and before it could be completed these fires swept in. Presumably similar condition prevailed in the adjacent tracts of *North Malabar*.

In the *Kollegal* division the special protection, on the other hand, was completely successful, no portion attempted having been burnt. The District Forest Officer (Mr. Woodhouse Adolphus) generously states, "Credit for this must be given "to the Range Officers and their subordinates and also to some of the leading cattle "owners whom I assembled from time to time and urged them to use their influence".

The District Forest Officer himself, no doubt, inspired those he praises to do their best.

General Protection.

36. The areas under general protection also suffered more than in the previous year, the area reported as burnt over being 48,630 acres against 13,412 in 1918–19. The increase occurred mostly in *Kollegal* (18,135 against 7,016) and *South Coimbatore* (13,206 against 764). I cannot believe however that the figure for the latter district in 1918–19 can be correct.

(*c*) *Protection against cattle.*

37. 76·3 per cent of the total area in the charge of the Forest Department was open to the grazing of all animals except goats and an additional 5·2 per cent was closed to sheep.

38. *Incidence of grazing.* The only division reporting the incidence is *South Coimbatore* (Mr. J. S. Scot) where one cow unit was licensed per 25·3 acres of open area. The District Forest Officer points out, however, that "this includes much *shola* (evergreen) forest and the grass hills of the Upper Anamamalais" which are never resorted to for grazing. This probably doubles the incidence.

39. The number of *cattle impounded* during the year rose from 11,484 to 11,827, which is a smaller percentage of increase than the increase in the cases of unauthorised grazing reported. It exceeds the average for the three years ending with 1918–19 by 2,955.

40. *Introduction of the Forest Village System.* A preliminary step in this direction has been made by the sanction of enhanced grazing fees in the *South Kanara* district, but it came into force only after the close of the year. From the nature of the country and the customs of the people the working of the system will present problems of considerable difficulty and it is somewhat doubtful that it can be worked satisfactorily at all.

In the *Malabar district* similar difficulties are met with. There are at present good reasons for not attempting to introduce the system, which is not needed at all in the *North Malabar* division. *Western Circle.*

In the *Kollegal* division proposals were made during the year, but they proved to be too cumbersome and the District Forest Officer has been instructed to revise the scheme.

No reference to this subject is made in the other divisions.

In the *South Coimbatore* division a revised scheme for the management of the grazing areas of the Udamalpet Range is under trial and one for the Pollachi Range is under preparation. Both schemes aim at securing the co-operation of the people.

(*d*) *Protection against injuries due to Natural Causes.*

41. *Spike disease of sandal.* No progress can be recorded in the increase of knowledge of this disease. Theories come and theories go but 'spike' goes on for the present at least.

The clearing of "Isolation lines" round infected areas was discontinued during the year in the *Kollegal* and *North Coimbatore* divisions except in one area in Kollegal where an almost completed line was ordered to be completed as an experiment. The value of the operation was questioned by the previous Conservator with whom the present writer agrees. More than an experiment is not justifiable as far as our present knowledge goes.

Of neither of these divisions does the District Forest Officer refer to the important point as to whether the disease is spreading or not.

42. *Lantana.*—This pestilent shrub is very much in evidence in almost all the divisions. In the Tekkadi Forests of *South Coimbatore*, the areas immediately adjoining them and also in the Punachi Working Circle which localities the present Conservator has recently visited after an absence of 3–5 years, there has been a marked increase in the area covered by it and its density in spite of much labour and money spent on its eradication. The matter is under enquiry, and it is hoped that a solution will be arrived at, but the lack of labour is the chief hindrance. It is probable that the solution lies in combining eradication with cultural operations. In this division lantana pulling was carried out over an area of 430 acres at a cost of Rs. 2,156.

In the *North Malabar* division lantana was set fire to in the Begur Reserve in order to facilitate subsequent extraction. The District Forest Officer reports that some damage was caused thereby to the standing tree growth owing to the presence of dead bomboos. Also some temporary and one permanent bridge were burnt.

The expenditure in this division was Rs. 1,182 for pulling lantana over an area of 1,562 acres. Unless the lantana was very thinly scattered the work is not likely to have served any good purpose. This applies *a fortiore* to *South Mangalore*, where it is alleged that lantana was eradicated (?) in two coupes at a cost of Rs. 17–1–6. The area is not stated. No important lantana eradication work was carried out elsewhere. This work was stopped in the *Kollegal and North Coimbatore* divisions as it was held that the results were not commensurate with the expenditure.

43. *Prickly-pear.*—The work of eradication of prickly-pear was stopped everywhere as the money spent was sheer waste. If there is one thing in connexion with the eradication of this pest, as well as of lantana, that is certain it is that if the work is undertaken at all it should be done on a well thought out and regular scheme and that parsimony is folly. Casual clearance here and there and suspended efforts are absolutely useless. The eradication of prickly-pear is far more costly than that of lantana. Dense prickly-pear cannot be eradicated by any method tried hitherto for less than Rs. 50 per acre and is more likely to cost Rs. 100 or even more. To spend Rs. 5 or 10, or even 15 per acre in fitful efforts, as was done in past years, is even less profitable than throwing the actual money among the bushes.

44. *Weeds and Climbers.*—A certain amount of weeding and climber cutting is carried out in most districts. This work is of course imperative in the regular plantations such as those in Nilambur and the regeneration areas in *South Coimbatore.*

Western Circle.

In this latter division weeding was also carried out in the Ayyerangal fuel coupes in the Pollachi range at a cheap rate and with considerable success.

45. *Damage by animals.*—Locusts or some similar insect and root borers caused some failures in natural regeneration by patches in *North Malabar.*

Defoliators were at work in the teak plantations of *South Malabar* for an unusually lengthy period owing to the lateness of the monsoon.

Severe damage was caused to the young plantations by what appears to be a harlequin grasshopper It is not stated whether any regressive measures were adopted. The grasshoppers should be collected by boys and destroyed.

Larvæ of *Phassus malabaricum* were noted to be damaging teak saplings in the Benne plantation in the *Nilgiri* district. On the advice of the Imperial Forest Zoologist the attacked stems were cut out and burnt.

In *Central Coimbatore* porcupines, and possibly also rats, ate and damaged seeds of mango, *vateria indica* and *Artocarpus hirsuta* dibbled on the Sappal slopes of the Chenath Nair Reserve. Practically all the mango seeds were destroyed. Nearly all the vateria indica seeds were attacked, but the wonderful vitality of this plant enabled it to withstand very considerable injury so long as the roots were not severed or seedlings were not completely lifted out of the soil.

Attempts are being made to poison these noxious animals by laying down seeds of vateria poisoned with arsenic and strychnine. They should also be trapped.

46. *Storms.*—Some teak trees in *South Malabar* and a number of trees in the plantations in the *Nilgiri* division were blown down and also damage was done to coppice growth in the exotic plantations round Ootacamund and Coonoor.

47. *Floods* are reported to have carried away portions of teak plantations in *South Malabar* and caused erosion in natural forest.

4. Sylviculture.

(*a*) *Natural reproduction.*

48. *Hopea parviflora* did not seed well during the year. This was most unfortunate, as not only were fairly extensive sowings contemplated, but the Forest Research Officer (an appointment created during the year) was starting research on the germination and tending of this species. His efforts with this species were therefore limited.

He was also starting experiments with *Tretrameles nudiflora* and *Terminalia paniculata*, but, though seeds in plenty could be obtained, for some unknown reason their germination was practically nil. This phenomenon was not confined to seeds obtained from one area since sowings of the first-named species in *South Mangalore* and of the second species in *South Coimbatore* met with similar ill success.

49. As usual in the deciduous forest, the fact that the more valuable species reproduce themselves well from seed but fail to establish themselves unless vigorous measures of assistance are afforded, impressed itself. Xylia Xyloearpa is an exception.

In many evergeen forests, however, the case is different, and under favourable conditions seedlings of the very best of the evergreen species are found in abundance ready to spring up at the first opportunity.

Sandal is an exception in the deciduous forests and is spreading rapidly in suitable areas in which it has once obtained a footing. I was struck with the great increase in the quantity of sandal in the Araipalayam Working Circle which I had not seen for 13 years.

(*b*) *Artificial reproduction.*

50. *Regular plantations.*—One hundred and fifty-four acres were planted up in the *South Malabar* division mostly with teak. Also a small area was planted with *Terminalia tomentosa Lagerstræmia flos-regine* and *Adina cordifolia*, but this proved a failure.

No other regular plantations were made during the year. *Western Circle.*

51. *Taungyas.*—Fifty acres were operated on in the *South Mangalore division*; it is reported that it is too early to form any opinion as to the success attending on the undertaking.

The area of 20 acres of 'tuckle' referred to last year as being taken up by Kurumbers in the Begur Range of *North Malabar* having failed, teak seeds were dibbled in in the current year and simultaneously a second crop of ragi was raised. It is reported that the germination of teak is satisfactory and that blanks have been supplied with seedlings raised in nurseries.

In the *Nilgiri* district, 8,465 teak seedlings were planted departmentally and 3,200 by kurumbers on an aggregate of 13½ acres of old tuckle. Nothing is stated regarding the success or otherwise attending the operation.

In *Central Coimbatore* division the growth in the Puliampalli tope of the Attapadi Range was sold to a contractor on condition of restoring the area with teak growth. Seedlings were provided. It is reported that the result is very successful.

A similar attempt with the Tamburattipottai reserve in the same range, however, was just the reverse. The conditions of soil and exposure are far more favourable in the former area.

Cultural operations.

52. In *North Mangalore* sowings in patches 12 feet apart of seeds of Hopea parviflora, Vateria indica and Artocarpus hirsuta were made over 342 acres. Germination is reported to be good everywhere.

Sandal dibbling of 1918–19 is reported to have been unsuccessful. Judging by the estimates submitted, the reason was that wrong methods were employed.

Dibbling of the same species made over about 100 acres in the year under report are stated to be satisfactory so far.

About 640 acres in four reserves of the *South Mangalore* divisions were dibbled with seeds of *Hopea parviflora*, *Mangifera indica*, *Vateria indica* and *Artocarpus hirsuta*, but results are not reported.

In the *Nilgiri* division sandal seeds were dibbled experimentally over 25 acres at Kargudi but the report is silent as to results.

Two hundred and eighty lbs. of sandal seeds were dibbled and sown broadcast over an area of 75 acres in the *Kollegal* division and germination is stated to be good.

A further quantity of 240 lbs. of sandal seeds were dibbled in two other acres in May and June. It is too early to expect results.

In *North Coimbatore*, Mr. C. M. Hodgson as District Forest Officer started some interesting cultural operations around the edges of patches of evergreen forest at high elevations in the Minchiguli area. These were continued during the year under report on the advice of the late Conservator (Mr. Tireman) and cuttings of certain species also were tried. The results are encouraging. *Eugenia Jambolana* and *Cedrela Toona* from seed and *Ficus infectoria* from cuttings have done well. These operations will be continued and other species will be tried. The object of the operations is to cause the evergreen patches to extend and kill out the coarse grass which at present occupies the area to the exclusion of other growth.

Around Galidimbam in the same division the same officer inaugurated a system of dibbling of sandal seed which has met with some success. These operations are being continued and extended.

In *Central Coimbatore* in the Chenath Nair Reserve seeds of *Artocarpus hirsuta*, *Vateria indica* and *Mongifera indica* were dibbled. The first two, as previously stated, are doing excellently in spite of porcupine and rats, but the third succumbed entirely.

It was also intended to sow seeds of Hopea parviflora, but this was prevented by the great shortage of seeds reported earlier. Just after the close of the year, however, a considerable number of naturally grown seedlings were obtained from *South Kanara* and these have been planted instead. It is reported that they are doing well, the planting having taken place during a period of considerable rainfall. The results will be carefully watched. If successful, these operations will have a far-reaching effect.

Western Circle.

The Mahogani (*Swietenia macrophylla*) put down in the Dhoni Reserve some 30 odd years ago have done so well and produced wood of much good quality that the extension of this species in that locality is very desirable. As teak also does well, it is intended to plant up or dibble the whole of the suitable area of that small reserve with these species. Good progress has been made, teak and mahogany being put down in alternate rows and are doing very fairly well.

In *South Coimbatore* in the Tekkadi leased forest casualties were replaced in the previous year's concentrated regeneration areas over 25 acres. This was planted with teak and, on the whole, has done remarkably well.

During the year 19 acres were sown with *Dalbergia latifolia* and *Terminalia paniculata*. The former has germinated well, but the progress of the seedlings is slow. The latter failed almost entirely; very few seeds germinated at all. The area was resown with *Delbergia latifolia*. On a small area experimental sowings of *Terminalia tomentosa*, *Lagerstromia lanceolata*, *Xylia xylocarpa* and *Pterocarpus morsupium* were made. The germination appears to have been fair, but wild elephants and, still more, bison have come in and trampled the seedlings hopelessly.

In the Punachi Working Circle some of the experimental areas dibbled in 1916–17 have thriven remarkably, and there is a fine growth of established teak poles. Other areas have failed unaccountably, as also all further attempts since that year.

(c) Operations for the improvement of the growing stock.

53. In the two Mangalore divisions light improvement fellings were carried out in several areas to assist the progress of young *Hopea parviflora* by freeing its crown. Similar operations were also carried out in the *North* division to assist sandal.

Thinnings in six teak plantations in *North Malabar* were effected and 14,421 poles were extracted at a cost of Rs. 341 and were sold for Rs. 6,650.

Thinnings were also carried out in 17 compartments (though not completed in all) of the Nilambur Teak plantations at a total cost of Rs. 2,714. Weeding was also done in the young plantations of 1917, 1918 and 1919 at a total expenditure of Rs. 1,194.

In the *Nilgiri* district improvement fellings were executed over 1,376 acres of compartment six of the Mudumalai Working Circle. These operations, besides the extraction of dead and dying trees of valuable species, also comprised the cutting of creepers, girdling of inferior species and cutting back ill-grown trees. The District Forest Officer doubts that these operations, which have been carried out for the past ten years, have really been effective in improving the growing stock.

In the same district nine acres of the exotic plantations round Ootacamund and Coonoor were thinned.

Improvement fellings were carried out in three coupes of the Punachi Working Circle in South Coimbatore. Weeding in Ayyarangal fuel coupes has already been referred to.

A certain amount of creeper cutting was carried out in all the divisions.

5. Exploitation.

(a) System of management.

(i) Major Forest Produce.

54. The following statement indicates the area under the several systems of management :—

Sylvicultural system.	Area in square miles.	Percentage of total area under each Sylvicultural system.
Method of clear-fellings by compartment	10	·54
Selection method	267	14·41
Simple coppice	42	2·27
Coppice with standards	200	10·79
Method of improvement fellings	130	7·02
Unregulated fellings	292	15·75
Bamboo felling	10	·54
Forests for which working-plans have been prepared but not subjected to any definite system of working ...	902	48·68
Total ...	1,853	100·00

55. Clear felling was undertaken only in the *North Malabar* (30 acres of natural forest of regeneration), the *South Malabar* (72 acres of teak plantation and 130 acres of natural forest prepared for planting), and *South Coimbatore* (19 acres of natural forest for concentrated regeneration) divisions. *Western Circle.*

Selection fellings are reported to have been carried out in seven of the nine districts over an aggregate area of about 2,500 acres.

Full effect has not yet been given to the order that as a rule fuel areas should be worked under the simple coppice system. About 835 acres were worked as simple coppice in three districts and 2,900 acres under coppice with standards in four districts.

Improvement fellings were made in four districts over an aggregate area of about 2,000 acres. Unregulated fellings consisted of fellings for Cinnamon stills in *South Kanara*, extraction of dead trees, windfalls and trees felled along road margins as well as for departmental use.

56. Final fellings in the Nilambur Teak Plantations in *South Malabar* were begun in 1918–19. The yield is considerably higher than was estimated.

57. In the Chenath Nair Reserve of the *Central Coimbatore* division (actually in the Malabar district) regular working of evergreen forest was started during the year on proposals made by the Conservator (Mr. H. Tireman). In the area under working (Dhonipoza valley) there is ample natural regeneration of the better species. (*Hopea parviflora*, *Dichopsis Elliptica*, *Diospyros macrophylla*, *Diospyros paniculata*, *Diospyros assimilis*, *Hemicyclia elata*, *Cullenia excelsa*, etc.) The larger trees are being felled so as to open out the canopy to a certain extent and stimulate the development of the natural regeneration. The exact degree of opening out that is necessary and advisable must be ascertained by experiment. Accordingly the intensity of the operation is varied in different parts of the area.

At present there is no indication of the invasion of weeds and there is little of the Strobilanthes on the area that threatens some other localities, e.g. Karian shola in *South Coimbatore.*

In the event of natural regeneration being deficient, either of some or of all of the species, there should be no difficulty in supplementing it by dibbling or by transplanting natural seedlings from adjoining unworked areas. Similar operations lower down the same slopes show every promise of success under less favourable conditions.

By this operation it is proposed to extract 4,000 tons of timber during the financial year 1920–21. This outturn should be greatly increased in subsequent years and up to 10,000 tons are anticipated per annum at 50 tons per acre when the work is in full swing. It has been calculated that this reserve can be worked at that rate for 20 years, by which time other similar forests can be developed so that a continuous high yield from this class of forest can be safely expected.

There are large areas of evergreen forest in all the divisions except Kollegal and North Coimbatore, where the evergreen forests are limited.

The evergreen species are mostly unknown to the market with a few exceptions, such as *Calophyllum tomentosum*, *Dysoxylum*, *sp. Artocarpus hirsuta* etc. Sample logs of a number of the species occurring in the Chenath Nair forest have been sent for testing to the Kolar Gold Fields, where all but one were found serviceable. It is hoped to make large supplies to the gold mines, and there is also a very large market at Olavakode, which is in a way a timber clearing house between the west and east coasts, so that there is no fear for the saleability of the timber obtained.

Even small pieces are in demand and a certain amount of charcoal will be manufactured. The rate at which the produce can be brought down the slopes by means of the drag paths and slides constructed has yet to be ascertained by actual working. It is hoped that this will be sufficiently low to allow of the profitable extraction of even firewood derived from the small branch wood and other parts unsuitable for conversion into small timber.

Western Circle.

2. Minor Forest Produce.

(1) *Bamboos.*

58. The very general flowering of the large, thorny bamboo (Bambusa arundinacea) almost throughout the west coast divisions and in *South Coimbatore* during the past two years has considerably curtailed the outturn and in *South Malabar* has caused much inconvenience and expense in regard to floating operations for which this produce is indispensible.

The area worked cannot be stated since several districts have not reported the figures.

In *South Malabar* extraction of bamboos is mainly departmental as they are required for floating the yield of the Nilambur plantations to the coast. After the rafts are broken up the bamboos are sold.

(2) *Miscellaneous produce.*

59. The outturn of cutch in the North Mangalore division was less by 60 quarters than in the previous year, but the price realised (Rs. 830 per ton) was considerably better, so that the amount realized was Rs. 7,801 against Rs. 7,191 in 1918–19.

The two *Mangalore* divisions supplied about 1,270 tons of hay for military purposes.

The price of strychnine has risen owing to demand stimulated by the war. There is, therefore, a good deal of enquiry for Nux vomica and higher prices are to be expected as well as more intensive extraction in the future. At present data are almost entirely wanting as to the quantity of the product that is available. In some districts it is collected fairly completely, whereas in others it is entirely a waste product. Included in the general sales of minor forest produce the seeds are not collected by the contractors at all in those divisions.

(b) Agency of Exploitation.

(*i*) *Departmental Agency.*

Major produce.

60. As in the past the extraction of timber is mainly by departmental working.

The extraction of sandalwood, of course, is entirely by departmental agency. The details of extractions, check and accounting are not entirely satisfactory and the advisability of introducing the rules in force in the Southern Circle is under consideration.

One fuel coupe was worked departmentally in the *North Mangalore* as no one would purchase it standing.

In the *Nilgiri* district the extraction of fuel from the exotic plantation is effected by departmental agency.

Minor produce.

61. Bamboos are extracted departmentally in the *South Malabar* division for use for floating timber to the coast. To a small extent the same was done in the *South Mangalore* division.

Small quantities of bamboos were extracted in other divisions also for departmental use.

As already stated, 1,270 tons of hay were made departmentally in the *North* and *South Mangalore* districts and Catechu was manufactured by this agency in the *North Mangalore* division.

Five hundred pounds of Gum Kino were collected in the *North Malabar* division.

Minor produce was collected departmentally in the Mudumalai range of the *Nilgiri* district and honey, wax sheekahai in the *North Coimbatore* division. Elsewhere only small quantities were extracted by departmental agency for special supplies or experimentally.

Western Circle.

(ii) *By purchasers.*

Major produce.

62. Fifty acres of natural forest were sold standing in the *South Malabar* division; there was some extraction of timber by purchasers from reserves in the *Nilgiri* district and one coupe of the Punachi working circle in *South Coimbatore* was sold standing.

Timber on lands granted for cultivation were exploited by purchasers.

Fuel coupes were sold standing with the exception detailed in paragraph 60.

Minor produce.

63. With the exceptions noted in paragraph 61, all removal of bamboos was by purchasers either from definite localised fellings on areas sold standing or under permit.

With the exceptions described in paragraph 61, the right of collection of minor produce other than bamboos, catechu and ivory was sold and the extraction was by the purchasers.

(iii) *Right holders and privilege holders.*

64. The only divisions in which right holders remove forest produce are the *North and South Mangalore* where the value of timber so extracted is placed at Rs. 9,000.

(iv) FREE-GRANTEES.

65. Small quantities of forest produce were removed under free grants, mostly for rebuilding houses destroyed by fire or metal for public works.

Free grazing was also allowed in the *Nilgiri* district for 2,319 buffaloes belonging to Todas, 90 buffaloes attached to a Badaga temple and 308 head of cattle, the property of chetties resident in the Mudumalai forests.

(*c*) *Outturn and Sources of Forest produce.*

66. The following table compares the exploitation of the year with that of the previous year :—

Agency of exploitation.	Timber and sandalwood in thousand cubic feet.		Fuel in thousands cubic feet.		Bamboos in value rupees.		Minor Forest produce including grazing in rupees.	
	1918-19.	1919-20.	1918-19.	1919-20.	1918-19.	1919-20.	1918-19.	1919-20.
					Rs.	Rs.	Rs.	Rs
By Government agency ..	675	664	816	622	14,833	14,551	47,967	48,131
By purchasers	889	963	4,611	3,165	33,557	42,550	2,09,977	2,09,693
By right and privilege holders.	19	23	..	..	..	..	..	..
By free grantees	9	1	..	..	38	12	3,007	1,702
Total ..	1,592	1,651	5,427	3,787	48,428	57,113	2,60,951	2,59,526

BY DEPARTMENTAL AGENCY.

Major produce.

67. The aggregate figures for the two years as regards timber show very little variation, but there were very large differences in several of the individual districts.

There was a decrease in *North Mangalore* as in the previous year, considerable quantities had been derived from trees felled on boundary lines.

In *South Mangalore* there were large stocks remaining unsold in depots, and the programme of felling for the year was curtailed.

In *South Malabar* only 80 acres against 100 acres of natural forests in the previous year were felled over and thinning operations in the plantations were not completed. These two causes shared in a decrease of 66,000 cubic feet.

Western Circle

In the *Nilgiri* division there was a decrease of 23,000 owing to poor outturn in one compartment of Mudumalai and to the working of a second being cancelled.

As a set-off there were small increases in *North Malabar* (due to more dead and dying trees in the coupes of the year) *Kollegal* and *North Coimbatore* (due to renewed sandal extraction which had been stopped in the previous year) and large increases in *Central and South Coimbatore.*

In *Central Coimbatore* the increase of 45,000 cubic feet was owing to the working of the evergreen forests of Chenath Nair already referred to and in *South Coimbatore* (43,000 cubic feet) to resumption of felling in the Tekkadi forest under the new working plan, working having been discontinued previously to allow for the transport and disposal of the accumulations of past years.

68. There were also considerable variations in the extraction of fuel.

In *South Mangalore* a decrease of 62,000 cubic feet is due to the curtailment of working pending disposal of unsold stocks of the previous year.

This seems to indicate for both timber and fuel that the fellings prescribed are in excess of the demand. Where this is due to improvement fellings there can be little objection. The question will be investigated.

In the *Nilgiri* district there was a falling off of 120,000 cubic feet owing to the postponement in working one coupe at Coonoor for want of an export road. This seems to indicate the necessity of providing for roads well in advance This question is of importance in this locality since there is a very large and growing demand.

A decrease of 23,000 cubic feet in *Central Coimbatore* has not been very clearly explained.

There were counterailing increases in *North Mangalore* (13,000 cubic feet) due to better yield in fuel coupes and to utilization of lop and top in the timber working circles ; and less important ones in *South Malabar* and *South Coimbatore.*

BY PURCHASERS.

69. The removals of timber and fuel by purchasers are of a fluctuating nature, depending to a great extent on the applications and grants for land for cultivation and the quantity and kind of forest growth on them. Only one item calls for notice, and that is an increase of 32,000 cubic feet in *South Coimbatore* due to the sale of trees to a contractor in a remote forest on the confines of Cochin territory near the Cochin Steam Tramway.

70. The increase in realisation on bamboos is due to the higher rates realised at sales of coupes.

71. The removals by right holders are confined to Kumaridars in the two *Mangalore* divisions.

CHAPTER III.—FINANCIAL RESULTS.

—	1919-20.	1918-19.	Average of the preceding five years.
	Rs.	Rs.	Rs.
Revenue	19,89,730	17,17,267	12,32,509
Expenditure—			
Refunds	18,523	3,694	4,243
A. Conservancy and Works ..	7,37,802	6,47,341	5,08,397
B. Establishment	4,99,772	4,18,555	3,90,549
Total expenditure ..	12,56,097	10,69,590	9,03,179
Surplus ..	7,33,633	6,47,677	3,29,330

Of the total receipts of the year 77 per cent were from major produce,
10 ,, minor produce,
6 ,, grass and grazing,
7 ,, miscellaneous.

Of the expenditure on "Conservancy and works 51·9 per cent was spent on exploitation, 24·9 per cent was spent on upkeep and improvement, 23·2 per cent was spent on miscellaneous items.

73. The outstandings at the close of the year aggregated to Rs. 318,188-3-4, of which Rs. 125,900-6-1 fell due in the year, against Rs. 3,35,744 and 70,777 respectively in the previous year. The estimated value of produce in sale depots at the close of the year amounted to Rs. 288,938 against Rs. 142,790 at the beginning. *Western Circle.*

74. The following divisions showed a deficit in the year's transactions :—

South Mangalore—A deficit of Rs. 11,920 against a surplus of Rs. 12,939 in the previous year. This is made up of a fall in revenue of Rs. 20,000 which has not been clearly explained by the District Forest Officer, but appears to be mainly in respect of sandalwood, and an increase of Rs. 7,400 spent on improvements. Also there was no sale of elephants.

North Malabar, where a surplus of Rs. 39,332 has been converted into a deficit of Rs. 6,418. This is in part accounted for by increased expenditure (Rs. 13,200), owing to the rise in prices and to increase in salaries, but mainly by delay in completion of timber felling and consequent non-realisation of the full timber revenue and to there being no sales of elephants during the year.

The *Nilgiri* division regularly shows a deficit which this year Rs. 26,944 against Rs. 21,710 in the previous year. The decrease is entirely in revenue, there being a decrease in expenditure. The deficit compared with the previous year is due to there being no elephant sales.

75. In three other divisions, though there was a surplus, it fell short of that of the previous year ; these are :—

North Coimbatore—Rs. 968.

Central Coimbatore.—Rs. 7,435, due to increased salaries and to a considerable expenditure on works connected with the Chenath Nair scheme, partly counterbalanced by increased revenue from minor produce and the two heavy compounding fees mentioned previously.

South Coimbatore—Rs. 87,420 due to the fact that there were no sales of land for plantations in the Anamalais pending a decision on the question of the extension of Government Cinchona plantations and to there being no sales of elephants.

76. In three divisions there was an increased surplus over the results of 1918-19. These were :—

North Mangalore plus 35,167. This was due to the adjustment of the previous year's supply of hay to the Military department and to sale of catechu of both years being credited in the current year.

South Malabar plus 2, 11,877. Due to a large increase in the quantity of timber sold and to advancing prices.

77. The chief causes of the increase in expenditure were—

(1) Increase in salaries including war allowances.
(2) Increase in wages and cost of materials
(3) Expenditure on the new Chenath Nair scheme.

CHAPTER IV.—RESEARCH AND EXPERIMENT.

Experiments.

78. A certain number of experiments have been attempted as usual in all districts, but the statements for the most part are too vague and indeterminate to be usefully recorded in the Administration Report at present. Some have already been referred to under Sylviculture.

The following may, however, be mentioned :—

The experimental growing of lac in the Bolampatti valley of the *Central Coimbatore* division by the Government Agricultural Entomologist was continued. One hundred *Zizyphus* (*Jujuba*") trees were pollarded and infected with stick lac. The operation has met with very moderate success. It is understood that the propagation of lac is more successful at the Agricultural College itself on leguminous trees. It seems very probable that the conditions in the Bolampatti valley are not very suitable ; possibly the degree of atmospheric saturation is too great.

The testing of timber at the Kolar Gold Fields has been referred to.

Western Circle.

Sample logs of several timbers were sent to the Imperial Forest Exhibition in London through the Government Timber Agents per Mr. W. W. Howard & Co. Great interest has been taken in a sample log of *Teminalia tomentosa* (now changed to *Terminalia crenulata*—vide Gamble's Flora of the Madras Presidency), and if this proves to be an average specimen and not a *lusus naturae*, it would indicate that as much of this timber as the European market will absorb should be shipped to England.

It seems probable that better figuring will be obtained from rootwood of these timbers which are valuable for their grain and markings such as *Dalbergia latifolia*, than from the stem. Experiments are being undertaken and if successful may lead to the profitable extraction of large root systems of those species.

Research.

79. Seasoning experiments have been undertaken on a number of species at the instance of the Imperial Forest Economist, but as they are incomplete it would serve no good purpose to give details at the present stage.

The late Mr. A. W. Lushington was on special duty during the year in connexion with the valuation of evergreen forests and identifying the species of which they consist.

Most valuable work was carried out by him and data of considerable importance obtained, which will form the basis of future working.

Ranger P. Sankunni Menon was deputed to assist Mr. Lushington and obtained a very good knowledge of the evergreen species through the latter gentleman's instructions.

Mr. Lushington also made collections of botanical specimens that are preserved for reference.

80. The post of Forest Research Officer was created during the year and was filled by the appointment of an Officer on the 6th August 1919.

The work had to be organized and planned and the greater part of the year was occupied in preliminary works. It was only during the last 3 or 4 months of the year that actual experimental research could be begun. Considering this fact and that there were 3 changes in officers, the progress made is very satisfactory.

81. Experimental areas were established at Dhoni in the *Central Coimbatore* division and at Nilambur in *South Malabar*. In addition, experimental work is also under observation in *South Mangalore*.

The Forest Research Officer is to confine his attention for the present mainly to the following species:—

1. *Hopea parviflora.*
2. *Artocarpus hirsuta.*
3. *Vateria indica.*
4. *Tetrameles nudiflora.*
5. *Gmelina arborea.*
6. *Terminalia paniculata* and
7. *Bombax malabaricum.*

The object immediately aimed at was to ascertain the conditions most suitable for the germination of these species; the time taken for germination, the duration of the vitality of the seeds under various conditions, the influence of age, size and soundness of the mother trees; also the conditions required for the further development of the plants after germination.

Owing to the fact that the seeds of *Tetrameles nudiflora* and *Terminalia paniculata* failed to germinate and that the season for *Gmelina arborea* and *Bombax malabaricum* was too early, attention was mainly concentrated on *Hopea parviflora* and *Artocarpus hirsuta* though the others were not neglected.

82. An experimental garden and nursery was laid out at Dhoni, which was fenced in with wire mesh fencing after the close of the year.

It is obviously too early to hope for very extensive results, but the following points have been elucidated, though perhaps they will require confirmation in subsequent years.

(*a*) The seeds of *Artocarpus hirsuta* and of *Hopea parviflora* retain their vitality and power of germination far longer than was thought. The first named, as far as experiment has reached, are more hardy than the latter, but even these are quite capable of germination a month after collection and, probably more, if properly kept, i.e., dry and not exposed to rapid and frequent alterations of temperature and moisture. *Western Circle.*

(*b*) That light shade conduces to the success of germination, a higher percentage being obtained under that condition than under heavy shade or complete exposure.

This may be due either to overdesication and hardening of the soil or to wash of surface soil or to both causes.

(*c*) *Hopea seeds* should be very lightly covered and a horizontal position is more favourable to successful germination than any other.

(*d*) The removal of the pericarp of *Artocarpus hirsuta* does not affect the germination of the seeds.

(*e*) That the seeds of *Vateria indica* are quite extraordinarily hardy and germinate in spite of very considerable mutilation.

83. At Nilambur experimental plots have been started with the following objects :—

(*a*) To ascertain whether *Hopea parviflora* and *Artocarpus hirsuta* would form a suitable under story in the teak plantations, and, if so, to arrive at the most suitable conditions of shade and age of the upper-story for their introduction, and whether they should be brought in by sowing or planting.

(*b*) To study the requirements of *Hopea parviflora* as regards light and shade at various stages in order to arrive at the best method of tending a young crop of that species in deciduous forest as well as in evergreen forest.

Observations are also being recorded regarding good and bad seed years of *Artocarpus hirsuta* and *Hopea parviflora* and also their rates of growth.

84. In connexion with the work of the Forest Research Officer it is essential that it should be possible to recognise at once the plants under investigation from their earliest stage since the seedling is often very different in appearance to the later stages. For this purpose good drawings at all stages are required and the services of a good draughtsman are necessary.

Further, for the close and continuous observation of the progress of germination and subsequent growth a headquarters garden is a necessity. Neither of these facilities are available at present, but by the courtesy of Rai Bahadur M.R.Ry. K. Rangachari Avargal, the Lecturing Botanist at the Agricultural College, the Forest Research Officer has been able to make some progress after the close of the year, in that direction, by availing himself of the resources of that institution.

The Forest Research Officer, Rao Sahib M.R.Ry. K. R. Venkataramana Ayyar Avargal, is to be congratulated on a good start.

CHAPTER V—ADMINISTRATION.

85. A list of officers in charge of the circle of the several divisions and the office of the Forest Research Officer will be found in Appendix C.

Health and sanitation.

86. Generally speaking, the health conditions seem to have been better during the year.

Health is reported to have been fair in *North* and *South Mangalore*, where two casualties (one forest guard in each division) are reported as due to pneumonia and consumption respectively.

In *North* and *South Malabar* and in the Wynad portion of the *Nilgiri* district malaria was very prevalent. In *North Malabar*, one Forester, two Forest guards, and one watcher are reported to have succumbed to that disease and one Forester died of

Western Circle.

cholera in *South Malabar*. In *North Malabar* influenza, and smallpox were prevalent and disorganized the working as the labour absconded.

The District Forest Officer, Mr. Lasrado, had to take leave on account of malaria and his successor, Mr. C. Mahony, was prostrated with fever and had to be relieved urgently.

In the Mudumalai forests all the officers suffered from malaria from time to time.

Measures are required to make conditions more healthy by clearing wide open spaces round the habitations and by providing a better water-supply. In other parts of the *Nilgiri* district health was good.

In *Kollegal* also fever was prevalent and three forest guards and one watcher are reported to have died of the disease.

There was a certain amount of fever in *North Coimbatore*, but influenza was far more to be feared. Though there were no casualities among the regular Forest staff, many hill men employed by the department and one of its contractors died of that scourge.

The only casualty in *South Coimbatore* was that of a Forester due to cholera.

It is pleasant to turn from this to the report from *Central Coimbatore*, which would appear to be a health resort since the two casualties (a forest guard and a tannadar) are reported as due to old age.

87. Serious steps are now being undertaken in the direction of improving the health conditions in the most malarial places.

The Tekkadi forests and Mount Stuart have earned unenviable notriety ever since the forest department entered into occupation.

The Chief Conservator visited Mount Stuart with the Surgeon-General, the District Forest Officer and the Forest Engineer in April. As a result of this visit, vigorous steps in the direction of sanitation are contemplated.

Already a wide belt all round the Mount Stuart settlement has been cleared of all growth and all streams on the hill have been opened out by cutting lanes through the forest on either bank, thus allowing a free draught through. This is calculated to blow away the malaria-conveying mosquitos from the buildings and to cause the early drying of the small pools in which these insects breed.

It is further proposed to cut channels to drain, fill up or treat with kerosene the pools in the stream beds which might provide breeding foci.

The cistern at Mount Stuart has been covered with fine mesh netting.

In addition it is proposed to locate the subordinates quarters and coolie lines well above the valleys in healthier surroundings and to provide an adequate supply of good uncontaminated water either by digging wells or by forming a reservoir on the Tunakadavu River whence water will be pumped up to the several settlements.

Similar steps are under contemplation at Attakatti, an equally malarial locality where the headquarters of the Punachi range are situated.

88. In connexion with the Chenath Nair Scheme in Central Coimbatore new buildings to house the staff and lines for coolies are under construction on a ridge well above the valley. These are to be supplied with good water by means of a pipe line from a perennial stream.

89. *Tours and Inspections of Officers—Conservators.*—The Conservator spent an aggregate of 224 days on tour as against 157 in the previous year. All the divisions were visited during the year except South Coimbatore which, however, was visited both just before the beginning and soon after the close of the year.

All the Divisional offices were inspected by the Conservator.

District Forest Officers.—All District Forest Officers spent more than the prescribed period on tour except in the South Malabar and Nilgiri divisions. The shortage in these two was due to one officer being in charge of the two divisions for a considerable portion of the year and to the District Forest Officer, Nilgiri division (Mr. B. F. Rigold), at one time being in bad health.

All the Range offices except three in the Nilgiri division were inspected during the year. The Ootacamund Range office was to have been inspected just before the close of the year, but was not ready for inspection owing to the slackness of the Range officer (C. Srinivasa Rao) and was inspected immediately after. The other two Range offices in the same district were not inspected owing to the lack of a separate District Forest Officer. *Western Circle.*

90. *Audit of the District Forest Office accounts.*—All the District Forest offices, except that of South Coimbatore, were audited by the Assistant Inspector of Local Fund Accounts. In addition the Assistant Accountant-General audited the accounts of the Kollegal, North Coimbatore and South Coimbatore offices. The reports are generally satisfactory.

Recruitment.

91. Mr. F. D. Ardagh, M.A., Assistant Conservator of Forests, joined the Imperial Forest Service in March 1920, and was attached to the Conservator of Forests, Western Circle, for training from 14th April 1920.

IMPERIAL FOREST COLLEGE, DEHRA DUN.

92. Mr. H. C. Brown, Probationery Extra Assistant Conservator attached to the *Nilgiri* district was deputed to the above College for training during the year. One Probationery Extra Assistant Conservator, M.R.Ry. M. H. Krishnaswami, rejoined the Circle after completing the course.

VERNACULAR TRAINING SCHOOL.

93. The Vernacular Training School conducted in Malayalam was held in the *Central Coimbatore* division from February to July 1920, in the charge of Ranger T. G. Sankaran Nayar, assisted by Ranger C. Karunakara Menon. The school opened with a force of 11 foresters and 15 forest guards. One forest guard died of pneumonia and one was sent down as unfit for training. The class closed with 24, all of whom secured certificates.

One hill Malasa forester and one Kadir guard from the hills of South Coimbatore underwent the training, and it is to their credit that these "farouche" men passed through the course successfully and were willing to be absent from their natural hamlets for so long a period.

CHAPTER VI—GENERAL.

(1) *Formation and Management of Panchayats.*

94. No new Panchayats were formed during the year.

North Mangalore.—89·34 acres in the Chembugudde Reserve and two blocks of reserved land aggregating 639·72 acres are under Panchayat management, but no report had been received from the Revenue Officers at the time of compilation of this report.

Regarding Village Forests, the Collector (Mr. R. H. Ellis) writes:—"I am anxious to see the Forests Village System established, though doubtful whether in all cases it will prove a success."

As previously stated, preliminary steps towards establishing this system have just been taken in this division and in *South Mangalore* where no panchayat management has been introduced as yet.

Apparently neither system is applicable to the *North* and *South Malabar*, and the *Nilgiri* divisions.

No areas have been handed over for panchayat management in the *Kollegal* division. A revised scheme for grazing under the Forest Village System is awaited from the District Forest Officer.

In *North Coimbatore* no reserved forest is under Panchayat management but one area of unreserved land of 2,570 acres has been managed by a panchayat in the Andiyur village for some years. The management is reported to be unsatisfactory, and the Collector writes:—"It will probably have to be dissolved and the area abandoned.

Western Circle.

In *Central Coimbatore* areas in the Erode, Bolampatti and Attpadi Ranges are under panchayat management, but the District Forest Officer has given no details beyond expressing the opinion that "the work of the panchayats on the whole was far from satisfactory."

The Conservator understands, however, that in the Erode Range the management was fair. Proposals have recently been made for the disafforestation and sale of the cultivable areas in that Range and the working of the hill forests by panchayats.

The report of the Revenue officers on the working of the Panchayats in this division is awaited. In *South Coimbatore*, 3 panchayats are at work and the district Forest Officer reports: "On the whole the result has proved very satisfactory." The full report is still awaited.

In the Udamalpet Range of this division a grazing scheme involving the co-operation of the villages is under trial.

(ii) *Measures for improving local supplies and facilities.*

95. No measures have yet been taken with regard to manure-leaf supply. In most of the divisions no steps are required, but in the *North* and *South Mangalore* Divisions and in parts of *North* and *Central Coimbatore*, some steps are necessary and the matter is under enquiry.

96. No steps are necessary for supply of fuel or for improving water supplies in the 4 West Coast divisions.

In the *Nilgiri* division permits for small timbers, fuel and bamboos are issued. The Badagas of the plateau obtain their supplies of firewood at a nominal yearly charge of Re. 1 per household.

Brushwood from fuel coupes is allowed to be removed at one anna per head load.

No provision is reported to be necessary in other districts where the existing fuel coupes meet the demand. In *Kollegal*, however, one or two new experimental fuel coupes are contemplated. In *North Coimbatore* alone was provision made for improving water-supply by Government agency, and about Rs. 450 were spent in deepening two watering pools.

In *Kollegal* a ryot was given permission to improve a drinking pool at his own cost.

(iii) *Timber Transit Rules.*

97. There was no change during the year.

The new rules for the *South Malabar* division were sanctioned, but came into force after the close of the year.

Revised Sandal transit rules for the *North* and *South Mangalore* divisions and Timber Transit rules for *Kollegal*, *North Coimbatore* and the northern portion of *Central Coimbatore* are under consideration.

(iv) *Jungle Tribes.*

98. There is no change, except that in the *Nilgiri* district a gang of Paniars enlisted in the previous year appear to have "vanished into thin air".

In *Kollegal* the District Forest Officer reports that according to the register of leases the aggregate area under the occupation of *Sholagas* is 71 acres, but he believes the actual amount to be nearer 400 acres. He is having the 7 settlements resurveyed. As these hill men are useful to the department, fire protection works in the remoter part being entirely dependent on their labour, Mr. Adolphus is inducing more of these people to settle in one or other of the existing settlements.

In *North Coimbatore* the two sholaga schools were continued during the year. The average attendance is reported to be 20 and 12 respectively. Proposals have been made recently for their permanency and for their future management.

In the Bolampatti valley of Central Coimbatore an informal school has been started by the District Forest Officer for the Irula settlers "utilising the services of a Forest Guard as a teacher. The children were supplied with books at the expense of the District Forest Officer."

In the same locality " 50 children of Irulars were vaccinated by a Forester who was once a vaccinator. The lymph was got by this department from King's Institute, Guindy." This seems to the Conservator to be a dangerous innovation. He would prefer a vaccinator who was once a forester since the responsibility would rest with the proper department. *Western Circle.*

The proposal to start a school for the Kadirs and Hill Malasars at Anaipadi in the Tekkadi Forest of *South Coimbatore* has been shelved for the present.

99. (v) *Mining and quarrying*—Nil.

(vi) *Live Stock.*

(*a*) *Elephants.*

100. There were 124 elephants on hand at the commencement of the year. During the year 3 were transferred from the Ganjām district for recuperation as they were in bad condition. One of these died soon after arrival. There were 15 captures during the year and 2 calves were born. The total addition was thus 19. There were 19 deaths so that the number remained the same at the close of the year.

The number of deaths among elephants was alarming and a special report has been submitted for the consideration and advice of the Civil Veterinary Department.

(*b*) *Other animals.*

101. There were 155 bullocks and buffaloes on hand at the beginning of the year. One hundred and fifty-two were purchased during the year and 91 died or were otherwise disposed of, leaving a total of 216 at the end of the year.

(vii) *Veterinary Establishment.*

102. The staff remained the same as last year in strength, i.e., one special Veterinary Inspector with headquarters at Nilambur and two Assistants, one at Mount Stuart and one at Gudalur.

Mr. F. X. Mascarenhas remained in charge of the Veterinary Establishment, but was on short leave during November. He continued to work with his customary zeal and efficiency.

(viii) *Suits.*

103. A suit filed against Government and some forest subordinates of certain villages in *North Mangalore* is pending. Two suits are pending in *South Mangalore*, one filed by a contractor for recovery of timber alleged to have been illegally conficated and one for refund of purchase money for canes the quality of which, it is alleged, the Ranger misrepresented.

A civil suit to recover Rs. 5,656 from a contractor in *North Malabar* is still pending in the Mysore Court.

In South Malabar a civil suit in respect of the boundary of Kariam and Muriam Blocks is still pending.

No other suits were pending and none were filed during the year.

(ix) *Control of unreserved lands by the Forest Department.*

104. In *South Mangalore* the disposal of offences against the Timber Transit Rules in respect of timber removed from unreserves or kumaki lands detected by Forest Officers was transferred to the District Forest Officer.

There was no other control over unreserved land.

C. E. C. FISCHER,
Acting Conservator of Forests, Western Circle.

ADMINISTRATION REPORT OF THE MADRAS FOREST COLLEGE, COIMBATORE, FOR THE YEAR 1919-20.

CHAPTER I.—CONSTITUTION.

(1) *Staff.*

The office of the Principal was held by Mr. F. L. C. Cowley-Brown throughout the year.

The posts of instructors were held by the following for the periods noted against each :—

Imperial Instructors.

Mr. C. B. Dawson, Deputy Conservator.	From 1st to 31st July 1919.
Mr. J. H. Longrigg, Deputy Conservator.	From 3rd August 1919 to 30th June 1920.
Mr. C. C. C. Wilson, Deputy Conservator.	From 5th March to 30th June 1920.

Provincial Instructors.

Mr. E. M. Crothers, Extra Deputy Conservator.	From 1st July to 15th August 1919 on which date he proceeded on privilege leave.
Mr. R. B. Cornwell, Extra Assistant Conservator, who was an attached officer at the college, joined the regular staff as an instructor.	From 16th August 1919 and remained throughout the year.
Mr. Saiyid Abdul Qadir Sahib, Extra Assistant Conservator.	From 1st July 1919 to 4th March 1920.
Mr. M. Abdul Karim was on the college staff throughout the year.	

Mr. J. E. D'Cruz, retired senior sub-assistant surgeon, joined duty on 21st October 1919 and remained attached to the college till 31st May 1920. The second sub-assistant surgeon Mr. M. A. Ephraim joined duty on 1st November 1919 and stayed till 1st December 1919 from which date he was detailed for duty in the Municipal hospital, as his services were no longer required. These officers gave lectures in First-Aid and Camp Hygiene to both the divisions in camp. First-Aid lectures were delivered to the senior division by the sub-assistant surgeon in charge of the joint dispensary and also by the College Medical Officer Mr. D'Cruz.

Instruction in gymnastics and drill were given to both the divisions by the College Havildars. The students were also given instruction in physical training during the last few weeks of the year.

Board of Visitors.

The Hon'ble Mr. S. Cox, the Chief Conservator of Forests, Madras, was ex-officio President of the Board of Visitors throughout the year.

The following officers were on the Board :—

Mr. H. A. Latham	From 1st July 1919 to 5th February 1920.
Mr. A. B. Jackson	From 1st July 1919 to 27th April 1920.
Mr. C. M. Hodgson	Throughout the year.
Mr. H. Tireman	From 1st July 1919 to 29th April 1920.
Mr. C. E. C. Fischer	From 30th April to 30th June 1920.
Mr. H. C. Bennet	From 28th April to 30th June 1920.
Mr. B. F. Rigold	From 6th February to 30th June 1920.

Chapter II.—Results of Examinations.

The Board of Visitors met at Coimbatore on 20th June 1920 and remained till 29th June 1920 on which date the prizes and certificates gained by the students of the 1918–20 division were given away.

Twenty-eight students appeared for the final examination and the following list, in order of merit, shows the certificates awarded :—

Name of student.	Name of circle or State to which attached.
Honours.	
1. T. M. Duraiswami Pillai	Central Circle.
2. K. P. Chathu Nayar	Southern Circle.
3. V. Narayanaswami Ayyar	Do
4. G. Appa Rao	Northern Circle.
Madras Ranger, Higher.	
5. D. N. Subrahmanya Ayyar	Central Circle.
6. D. Venkateswarulu	Do.
7. N. S. Eswaran	Western Circle.
8. A. N. Ponnayya	Southern Circle.
9. M. P. Subbayya	Western Circle.
10. P. Chengal Reddi	Central Circle.
11. K. G. Monappa	Western Circle.
12. K. K. Appayya	Do.
13. M. Sankaran Nayar	Do.
14. Abdul Rahim Khan	Central Circle.
15. J. D. Theodore	Southern Circle.
16. S. Nagalingam Pillai	Do.
17. A. Rama Rao	Northern Circle.
18. S. V. Duraiswami	Western Circle.
19. M. B. Subbayya	Coorg.
20. L. E. Juriansz	Ceylon.
Madras Ranger, Lower.	
21. G. Sankara Pillai	Ceylon.
22. K. R. Subrahmanyam	Southern Circle.
23. P. Kannan	Western Circle.
24. R. Thangavelu Pillai	Southern Circle.
25. Abdul Rahiman	Hyderabad.
26. J. D. Muttayya	Ceylon.
27. T. Sriramulu Nayudu	Northern Circle.
28. P. V. Krishna Rao Nayudu	Do.

The Government and other prizes were awarded as follows.

Best second year student (Gold Medal)	T. M. Duraiswami Pillai. (Central Circle).
Campbell Walker Prize for the best all-round ranger.	K. K. Appayya (Western Circle).
Brasier prize for the best outdoor ranger	K. G. Monappa (Western Circle).
Silver Medals for Honours	1. T. M. Duraiswami Pillai (Central Circle). 2. K. P. Chathu Nayar (Southern Circle). 3. V. Narayanaswami Ayyar (Southern Circle). 4. G. Appa Rao (Northern Circle).
Madras Conservators' prize for the best second-year student in Forestry.	T. M. Duraiswami Pillai (Central Circle).
The Lodge Prize for the best second-year student in Forest Engineering.	T. M. Duraiswami Pillai (Central Circle).
The Fischer Cup for the best Gymnast in the college.	D. Venkateswarulu (Central Circle).
The "Indian Forester" Prize for past students	R. E. Lemos (1912–14) (Southern Circle).
The "Indian Forester" Prize for present students.	K. R. Murjani (Bombay).
The Pentland Shield for the best all-round Athlete.	M. B. Subbayya (Coorg).

The students of the 1918–20 division were examined in "First-Aid" to the injured. Doctor Shortt Evers, the District Medical and Sanitary Officer, Coimbatore, and his Assistant Mr. P. Kesavaswami Ayyar conducted the examination. Eighteen students gained the St. John's Ambulance Certificate for First-Aid.

The 1919–21 division started with 34 students on the roll as per list attached. This number was reduced to thirty by the close of the year, three having been withdrawn from the college owing to incapacity or other causes and one having died of influenza.

The final examination in Physical Science for the 1919–21 division was held in June 1920.

The Chief Conservator's prize for the best student in the junior division was awarded to T. P. Palanikumaran.

Messrs. Maitland-Kirwan (Principal of the Bombay Forest College), A. A. F. Minchin, F.A. Seager, K. R. Venkataramana Ayyar, E. M. Crothers and Captain H. Irwin, M C., and Captain M. G. Platts, M.C., O.B.E., were the Examiners at the final examination in June. The members of the Board of Visitors as usual presided over the orals.

The senior division were an unusually good lot; in field work and athletics they were perhaps the best the college has ever had.

The juniors were well up to the intellectual average, but in general behaviour, smartness, and work in the field they did not compare well with the seniors.

The examiners' reports were on the whole good. Certain suggestions were made which will be given effect to as far as is practicable.

The want of text-books in Range Administration and Engineering is a heavy handicap to the instructors in these subjects. They are now actually in course of preparation but are unfortunately still incomplete and it will apparently be some months yet before they can be brought into use.

Practical training in the Demonstration Forest and Nurseries and in the Engineering Park continued throughout the year to form an important part of the college curriculum.

Mr. J. Morritt of the local Central Recruit School examined the students in gymnastics. He recommended a course in "Swedish Drill" as being of greater benefit to a majority of the students than compulsory gymnastics. Next year it is proposed to have a weekly physical training class and to make gymnastics an optional alternative.

The prizes this year were distributed by His Excellency the Governor of Madras who very kindly consented to come to Coimbatore for the purpose. Among those present at this function, the college was glad to welcome Sir George Hart, K.B.E., C.I.E., the Inspector-General of Forests to the Government of India, and the Hon'ble Mr. W. E. Copleston, Chief Conservator of Forests, Bombay.

After the prize distribution a garden party was held in the college grounds, to which a large number of guests were invited, by the Board of Visitors and staff of the college, to meet His Excellency the Governor.

CHAPTER III.—ADMINISTRATION, TOURING, HEALTH AND CONDUCT.

Administration.—The Board of Visitors met twice during the year. The first meeting was on 17th September 1919, His Excellency the Governor presiding.

The following important matters were discussed :—

(1) Extension of the Museum.
(2) Acquisition of the municipal well and connecting the same with the present well.
(3) Improvements to the Provincial Officers' quarters.
(4) Accommodation for the establishment.

The second meeting was on the 26th June 1920 and was presided over by the Chief Conservator of Forests, Madras, and attended by Sir George Hart, C.I.E., K.B.E., Inspector-General of Forests to the Government of India. The following important resolutions were recorded :—

(1) that the municipal well newly acquired should without delay be linked to the engine well;

(2) (*a*) that Dhoni should be substituted for Kargudi in the senior division touring programme,

(*b*) that 50 marks should be allotted for gardens and added to the grand total,

(*c*) that the officer in charge of division camps should be empowered to issue instructions to other officers attached to the camp,

(*d*) that the duration of lectures should not exceed 50 minutes, and

(*e*) that there are undoubted advantages in Forestry and Botany being taught to one division by the same instructor and similarly to the other division by another instructor ;

(3) that the library allotment should be raised to Rs. 300 per annum.

At both these meetings the question of water-supply to the college held an important place. It is much regretted that the college is still in no better position as regards its water-supply than it was six years ago, in spite of the passing of numerous resolutions by nearly every Board of Visitors' meeting that has been held since the inception of the college, to the effect that the matter was one of urgency.

In connexion with the subjects discussed at these meetings a further matter for regret is the long delay that is being experienced in the extension of the Provincial Instructors' quarters ; these are not yet finished and show no sign of early completion. Needless to say the occupants are put to considerable inconvenience by having workmen continually about their premises for such a long period. It is sincerely hoped that the work may be completed before the end of next touring season.

Touring.—In accordance with the touring programme sanctioned last year the touring season commenced in November.

The following programme of touring was carried out during the year :—

SENIOR DIVISION.

November—Komuttiyeri (Javadi Hills).—Study of Sylviculture more especially with reference to sandal ; measurement of girths of sample trees ; marking of dead and dying trees for felling ; extraction of dead and dying trees and their conversion ; study of experiments in bamboo sample plots. Botany. Study of a borewell and Myers pump ; verification of Forest Reserve Boundaries ; survey of a special tending area ; taking of levels for a pipe line.

December—Nilambur.—Study of Sylviculture more especially with reference to teak ; study of Xylia regeneration plots maintained by the Imperial Sylviculturist of Dehra Dun ; study of teak plantations ; stem analysis of teak.

Visit to Kallai Saw Mills.

January and February 1920—*Kargudi—Nilgiris.*—Combined camp. Actual marking of coupes for improvement fellings ; stem analysis of teak ; burning fire lines ; cutting guide lines and inspection paths. Botany. Working plan project.

April and May—Bandyshola.—Study of Sylviculture more especially with reference to Eucalypts. Inspection of coppice growth in Coonoor peak ; measurement of sample trees ; charcoal burning ; marking for thinnings. Final Survey Examination. Botany.

JUNIOR DIVISION.

November and December—Nilambur, Nedungayam and Calicut.—Visit to Henke's Tile Works ; the Government Fish Cannery at Beypore ; Beypore Forest Depot and Government Soap Factory. Study of teak plantations ; marking for thinning ; selection fellings ; construction of timber rafts ; alignment of road ; bridge construction ; engineering ; blasting ; visit to a Rubber estate.

January and February—Kargudi.—Combined camp. Guide line cutting ; fire tracing ; charcoal preparation ; marking for improvement fellings ; elephant capturing operations. Study of bridges ; survey and demarcation of college camps ; alignment of paths ; rectification of forest boundaries. Botany.

April and May—Ootacamund.—Study of Eucalypts and Conifers ; measurement and valuation of sample plots ; measurement of height and girth of Eucalyptus tree ; marking for thinnings. Survey ; verification of Reserve boundaries ; construction of fuel slides ; alignment of roads ; visit to range office and depot.

While at Nilambur and Nedungayam the swimming test was held. Forty-seven students out of 60 passed the test.

All operations carried out on tour have been recorded in the College Tour Journals; all observations made and works carried out which were of possible use or interest to the district were communicated to the District Forest Officers, through the Conservators.

For their constant endeavours to make our tours comfortable and instructive the thanks of the college are due to those Conservators and District Forest Officers in whose charges the college camped. From the range officers upwards, the college during the past touring season met with nothing but help and consideration. Were it not for this helpful co-operation the touring would be far less pleasant and far less instructive. The college authorities well know that much extra work and worry is entailed by a visit of the Forest College to any range or district, and fully appreciate the courtesy of all those with whom they have had to deal.

His Excellency the Governor of Madras, accompanied by an Aide-de Camp, visited the junior division camp at Arambi in May 1920 while the Hon'ble Mr. S. Cox, the Chief Conservator of Forests, inspected this camp in April and the senior division camp at Bandyshola in May.

Mr. H. Tireman, Conservator of Forests, Western Circle, visited the combined camp at Kargudi in February 1920 and the Junior Division camp at Arambi in April.

Mr. Maitland-Kirwan, Prinicpal of the Bombay Forest College, visited both the junior division at Arambi and the senior division at Bandyshola.

The Senior Provincial Service class from Dehra Dun under Mr. R. Bourne visited the college in February and were as usual accommodated at the hostels.

Health.—But for the lamented death of two students from influenza in the Coimbatore hospital in August 1919 the health of the college was very satistactory and thanks are due to Mr. D'Cruz, the college Medical officer. At the Kargudi camp we were warned to expect heavy casualties from malaria but owing to Mr. D'Cruz's stringent medical discipline the students as a whole enjoyed excellent health.

Excluding the very few grave cases that were sent to the Madras General hospital and the Government hospital, Coimbatore, for treatment, all the other cases were treated by the college sub-assistant surgeon in camp and by the Medical Officer in charge of the common dispensary in headquarters.

One student of the senior division was withdrawn from the college under Calendar Rule 25 for an absence of over two months, owing to continued ill-health. The student was sent to the General hospital, Madras, for treatment, and the Resident Medical Officer having recommended long rest the student was given long leave.

The weights of the outgoing students showed a marked increase over their weights recorded at the time of their entry.

Conduct.—With one or two exceptions the conduct of the students was uniformly good.

Chapter IV.—The Gass Forest Museum—College and Students' Libraries.

The Gass Forest Museum.—Mr. G. Viswanatha Ayyar, the Curator, was in charge of the Museum throughout the year.

The remaining ten sections of the Museum catalogue held over for future publication were printed during the year and copies were supplied to most Forest Officers in the Presidency.

The manuscripts of the Herbarium catalogue were sent to press.

The question of the extension of the Museum is bound up with that of the construction of an Administrative Block—a big addition to the college. The matter is now being considered by Government. The Museum is very much overcrowded and offers little scope at present for further development. Extension is therefore very badly needed and until this takes place no improvement in the urgent matter of the rearrangement of exhibits is possible.

Many contributions were made during the year to the Museum by Forest Officers and others and the gratitude of the college is due to the donors.

These contributions included panels of timbers, seed, bark, botanical specimens, photographs, models, trophies, etc.

The number of visitors to the Museum during the year was 19,715 as compared with 19,080 last year and 12,800 in the previous year.

Among these were included Their Excellencies Lord and Lady Willingdon, Sir George Hart, Inspector-General of Forests, the Hon'ble Mr. W. E. Coplestón, Chief Conservator of Forests, Bombay, Sir Alfred Bourne and the Hon'ble Major-General G. G. Giffard, C.S.I., Surgeon-General.

General Library.—Two hundred and seventy-six books were added to the General Library, of which 48 were presented by the following Forest Officers:—

Mr. F. L. C. Cowley-Brown.	Mr. C. B. Dawson.
„ H. Tireman.	„ E. M. Crothers.

Students' Library.—Ninety-one books were added to the Students' Library, of which 68 were presented by the following:—

Mr. F. L. C. Cowley-Brown.	Mr. E. M. Crothers.
„ C. B. Dawson.	„ R. B. Cornwell.

The thanks of the college are due to the above gentlemen.

Chapter V.—Supervision, water-supply, planting, roads, buildings, etc.

Supervision.—At the end of the year under review, Mr. Ramaswami Ayyar, the Estate Overseer, resigned his appointment, and his place has been filled by Mr. Saiyid Fakruddin Sahib, a retired Subadar of the 77th Moplah Infantry.

Water-supply.—The three schemes sanctioned by Government for increasing the existing water-supply have not materialized. The college is still suffering from the same disability as before, on account of lack of water, with the result that the ornamental park, formed at considerable expense, is in danger of failing; many of the trees planted have died for lack of water; the gardens of the staff, students and servants cannot be properly maintained; buildings and roads are greatly delayed and greatly handicapped, and are much more expensive than they need be; while the personal convenience, and comfort of everybody on the estate are seriously affected.

Municipal well.—The municipal well *has* been acquired, but as yet it cannot be utilized owing to the fact that the estimate, for connecting it with the college well, is still awaiting sanction.

Rain water tanks.—The construction of the rain water cisterns sanctioned by Government in Proceedings of the Public Works Department Mis. No. 1698 W., dated 12th December 1919, has been taken up but completion appears now to be indefinitely postponed owing to what is described as a "structural defect".

Nursery well.—It is proposed to substitute an oil-engine for the wind mill sanctioned for the nursery well. The matter is being considered by Government.

Bore well.—The bore well sunk in one of the spots indicated by Mr. Arnot and referred to in last year's administration report could not be properly worked for want of a suitable hand pump. The one supplied by the Government Agricultural Engineer did not work satisfactorily and had to be returned for repairs.

From the tests made in June it was found that the quantity of water obtainable was about 80 gallons per hour. The bore is being deepened to the depth indicated by Mr. Arnot and its capacity will be tested on receipt of the pump after repairs from the Agricultural Engineer.

Roads.—No new roads were constructed during the year under review. All the existing roads were kept in repair.

Buildings.—The following buildings in the college estate were completed and handed over by the Department of Public Works during the year:—

(1) Eleventh Hostel Block.
(2) One block of servants' quarters.
(3) Separate latrines for clerks.
(4) Masonry drain for clerks.

The works mentioned below, undertaken by the Department of Public Works, are in progress:—

(1) Improvement to the Provincial Officers' quarters.
(2) Construction of rain water tanks.

The necessary repairs to the hostels and the other buildings under the control of the Principal were effected.

Students' Club.—The Students' Club, the foundation of which was laid by His Excellency the Governor in September last, was opened by His Excellency on June 28th. Thanks to the efforts of Mr. Cowley-Brown (now on leave), who initiated the idea and who devoted much time and energy to its elaboration, and to the generosity of Government, of several Forest Officers, and of many past and nearly all the present students, the college now possesses an excellent Students' Club. The actual building work was carried out under the supervision of Mr. R. B. Cornwell, the Senior Engineering Instructor at the college, who devoted practically all of his spare time to this work for several months.

Chapter VI.—General.

Stock-taking.—The stock of the college was checked in detail in July 1919 and the irregularities brought to light were set right. The office was inspected by the Principal in February 1920.

The service registers have been posted up to date and the service and conduct registers of the 1918–20. Division students were posted and forwarded to the District Forest Officers concerned.

The work of the office establishment.—During the year under review the work of the office was less satisfactory than it appears to have been during the preceding year. A general slackness became apparent. Latterly, however, there has been some improvement. There is no doubt that the Manager and Accountant have heavy work and it requires continued concentration on their duties for them to keep up to the mark.

The conduct of the subordinate establishment was fair.

The work done by the Havildars Qadir Batcha and Govindaswami Pillai in camp is worthy of commendation.

The two Engineering Instructors and the two Havildars were deputed in July to the Sappers and Miners school at Bangalore to undergo a short refresher course.

Athletics.—The athletic sports were held on the 18th September 1919 and Their Excellencies Lord and Lady Willingdon graced the occasion with their presence; Her Excellency distributed the prizes.

The Richmond Cup was won by senior student L. E. Juriansz; and the Pentland Shield for the best all-round Athlete was won by M. B. Subbayya.

The Marathon Race in which the whole college competed was run over a course of eight miles at Kargudi on 31st January 1920. M. B. Subbayya of the senior division was the winner.

The inter-Division Cup for this race presented by the late Risaldar-Major Amir Muhammad Khan was retained for a second time by the senior division (1918–20).

The inter-Division Hockey Cup was won by the seniors and the inter-Division Football match also ended in a victory for the seniors, though the juniors put up a much better show than was expected of them.

The Hockey season ended in our winning, for the first time in the History of the college, the Stanes Challenge Hockey Cup presented by Sir Robert Stanes; all the hockey teams in Coimbatore, eight in number, competed in the tournament.

In the Grigg Memorial Sports in August 1919, three students from the Madras Forest College competed. Of these, L. E. Juriansz succeeded in winning the second prize for the 100 yards.

Mr. R. B. Cornwell was the Vice-President of the Athletic Club during the year and the success of the college in Athletics was no doubt largely due to his skill and devoted coaching.

The advantage of having all the instructors playing, and three in the college team, was certainly a great asset to the college. In one respect the Athletic equipment is incomplete; a worthy and adequate pavilion is still required.

General.—On the 19th September, Captain H. A. Irwin, M.C., the Forest Utilization Officer, delivered a most interesting and instructive lecture on "His experiences in Flanders".

A lecture on "Anti-Malarial precautions" was delivered by the Hon'ble Major-General G. G. Giffard, C.S.I., on 28th June 1920, to a large and enthusiastic audience. A daylight demonstration on the same subject was given the next morning.

The drawings of the students were bound and presented to them at the end of the course, a few selected ones being retained by the college. These are framed and hung in Popert—the Engineering Lecture room.

During the year a long needed reform was introduced. Government passed an order appointing all Government students deputed for training at the Madras Forest College as probationary rangers, and allowing them travelling allowance while on tour.

Staff.—The work of the staff was eminently satisfactory, the majority of them, —as usually appears to be the case—doing a great deal more than their duty. The work of Mr. R. B. Cornwell merits special notice. Not only did he show himself a first-class Instructor in Engineering but also he performed the duties of House Tutor, which are by no means light most thoroughly and efficiently and showed great tact in dealing with the many difficult problems which were continually cropping up. Attention has already been drawn to his excellent work as the Vice-President of the Athletic Club.

MADRAS FOREST COLLEGE, COIMBATORE,
20th September 1920.

C. C. WILLSON,
Principal.

To the Chief Conservator of Forests, Chepauk, Madras.

List of students admitted for 1919–21 course at the Madras Forest College, Coimbatore.

Name of student.	Circle or State to which attached.
1. G. Venkata Subba Rao	Northern Circle.
2. K. Venkatesam	Do.
3. C. S. Ganapathi	Do.
4. B. Krishna Rao	Do.
5. I. Ramamurti	Do.
6. A. Sitharamayya	Central Circle.
7. M. Parameswara Ayyar	Do.
8. K. Raghuraman	Do.
9. V. N. Subrahmanya Ayyar	Do.
10. T. M. Krishnamachari	Do.
11. D. Krishnaswami Ayyar	Do.
12. S. Nageswara Ayyar	Southern Circle.
13. A. R. Manuel	Do.
14. M. P. Phillip	Do.
15. T. Perumal	Do.
16. T. P. Palanikumaran	Do.
17. S. Ramalingam	Do.
18. P. A. Madhavan	Western Circle.
19. K. Raghavan	Do.
20. P. Sankunni Nayar	Do.
21. K. O. Anandan	Do.
22. R. Ramaswami Kavandan	Do.
23. N. Venkataramana Ayyar	Do.
24. N. M. Karumbayya	Coorg.
25. C. S. Ganapathi	Do.
26. T. L. F. Perera	Ceylon.
27. B. S. F. Lebbai	Do.
28. D. C. P. Wijeratne	Do.
29. C. K. Abyankar	Bombay.
30. V. Rama Rao Kamalapur	Do.
31. Balakrishna Narayan Dev	Do.
32. K. R Murjani	Do.
33. C. K Gulrajani	Do.
34. Nur Ahmed	Hyderabad.

Statement of revenue and expenditure for the Forest Year 1919-20.

Budget heads.	Amount. Rs.	A.	P.
Receipts—			
II. d. Grazing and fodder grass	16	6	0
V. b. Other sources	13,642	5	7
Total ...	13,658	11	7
Expenditure—			
Refunds and drawbacks	4	12	0
A. Conservancy and Works.			
A. VI. C. Purchase of stores, tools and plant	13,458	1	11
A. VII. A. Roads and bridges	3,700	7	0
A. VII. b. Buildings	2,428	4	11
A. VII. c. Other works	1,578	10	6
A. VIII. e. Sowing and planting	6,060	15	5
A. VIII. g. Other works	3,915	1	5
A. IX. C. Local allowance on account of high prices ...	900	7	11
A. IX. d. Other charges	2,582	10	1
Total A. Conservancy and Works ...	34,624	11	2
B. Establishment.			
B. 1. b. Salaries of superior officers	48,198	15	4
B. 1. c. Subordinate forest and depot establishment ...	28,868	9	6
B. 1. d. Office establishment	4,893	12	1
B. 1. e. Special allowances	4,349	5	2
B. 1. g. Local allowance on account of high prices ...	5,603	12	7
B. ii. b. Travelling allowance of superior officers ...	6,087	11	10
B. ii. c. Travelling allowance of sub-forest establishment.	8,720	13	4
B. ii. d. Travelling allowance of office establishment ...	1,086	15	4
B. iii. b. 1. Rents, rates and taxes	32	6	5
B. iii. b. 2. Sundries	19,323	4	1
Total B. Establishment ...	1,27,165	9	8
Total A and B including refunds ...	1,61,795	0	10

Abstract showing the live-stock, stores, tools, etc., for the year ending 30th June 1920.

District.	Description of stock.	On hand at the commencement of the year. Number.	Amount. Rs.	A.	P.	On hand at the end of the year. Number.	Amount. Rs.	A.	P.	Difference in value in favour of the year. Rs.	A.	P.	Difference in value against the year. Rs.	A.	P.
Madras Forest College, Coimbatore.	Surveying and other instruments.	1,941	5,365	10	7	1,686	6,647	10	2	1,281	15	7	..		
	Tools	503	247	5	7	619	518	4	9	270	15	2	..		
	Furniture	1,529	23,694	3	5	1,628	24,053	2	9	358	15	4	..		
	Tents	146	4,428	4	6	138	7,857	7	0	429	2	6	..		
	Uniforms and accoutrements.	82	291	7	9	74	231	15	2	..			59	8	7
	Scientific apparatus ..	1,542	913	15	0	1,538	870	14	3	..			43	0	9
	Photographic ,, ..	9	429	8	4	11	408	8	2	..			21	0	2
	Gymnasium ,, ..	9	412	7	8	9	383	3	10	..			29	3	10
	Machinery (oil-engine, etc).	2	2,687	5	6	2	2,567	11	0	..			119	10	6
	Miscellaneous	1,888	4,382	12	5	1,752	4,669	4	0	286	7	7	..		
	Total ..	7,651	42,853	0	9	7,457	48,208	1	1	2,627	8	2	272	7	10

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APPENDICES.

Appendix A.—Comparative statement of number and origin of fires that occurred during 1919-20.

District.	A. Fires caused by accident or through carelessness in burning fire lines.		B. Fires entering the forests by crossing exterior fire lines.		C. Fires beginning inside the reserves or fire-traced areas.														Causes unknown.		Total of A, B and C and causes unknown.	
					Owing to carelessness or accident.								By intentional firing									
					By workmen engaged in the forests or by purchasers of forest produce and by hay cutters.		By villagers, travellers, etc., passing through the forests.		By railway engines.		By lightning or by fire balloons.		In order to obtain new grass.		In order to turn out game or to reduce cover.		Maliciously fired.		Total.					
	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Northern Circle.																						
Ganjam	1	35	1	10	..	..	14	517	..	..	..	..	1	5	4	436	1	10	20	968	4	205	26	(*a*) 1,218
Vizagapatam ..	1	(*b*)..	1	8	..	..	9	1,135	..	..	..	..	..	..	..	..	..	..	9	1,135	1	(*b*) ..	12	1,143
Godavari, Upper.	..	..	26	8,731	..	..	1	3	..	..	..	..	2	493	8	4,475	..	..	11	4,971	13	3,476	50	17,178
Do. Lower.	1	1	3	141	2	12	17	597	..	..	..	..	..	..	6	1,041	1	40	26	1,690	25	982	55	2,814
Kistna	..	..	..	..	2	101	2	82	..	..	..	..	..	..	..	..	..	..	4	183	6	3,593	10	3,776
Kurnool, East ..	..	..	3	3,660	..	..	2	4,750	..	..	..	..	3	1,500	18	15,002	..	..	23	21,252	35	14,123	61	39,035
Do. South ..	1	124	30	58,284	3	1,284	3	474	5	51	..	..	8	13,286	..	..	23	72,805	42	87,900	32	33,736	105	180,044
Do. West ..	..	..	4	46,115	..	..	4	8,635	1	20	..	..	1	21,760	5	11,610	10	7,133	21	49,158	21	36,316	46	(*a*) 131,589
Total ..	4	160	68	116,949	7	1,397	52	16,193	6	71	..	..	15	37,044	41	32,564	35	79,988	156	167,257	137	92,431	365	376,797
Central Circle.																						
Bellary	..	..	..	..	..	..	67	34,417	4	244	..	..	6	1,724	..	.	1	43	78	36,428	17	9,061	95	45,489
Anantapur ..	..	..	23	7,369	..	..	9	1,376	5	3,070	..	..	39	16,191	1	1,000	17	2,832	71	24,469	18	7,469	112	39,307
Guntur	..	..	..	..	..	..	7	55	..	..	..	..	..	..	..	..	..	..	7	55	..	..	7	55
North Cuddapah.	5	3,272	16	18,722	1	55	3	108	..	..	..	..	67	35,587	..	..	14	17,186	85	52,936	34	43,437	140	118,367
South do.	1	1,500	6	1,485	1	120	9	4,312	..	..	..	..	72	49,542	..	..	9	3,943	91	57,918	2	12	100	60,915
West do.	6	4,528	5	8,800	4	2,178	10	1,118	..	..	..	..	104	44,011	..	..	5	5,497	123	52,804	22	7,712	156	73,844
Nellore	..	..	4	1,780	..	..	6	768	..	..	..	..	4	330	..	..	1	9	11	1,107	..	..	15	2,887
Chinglepat ..	..	..	1	90	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	5	2	95
Chittoor	3	52	10	1,250	1	120	13	857	..	..	4	441	35	6,834	1	24	10	354	64	8,630	18	3,326	95	13,258
Total ..	15	9,352	65	39,496	7	2,473	124	43,011	9	3,314	4	441	327	154,220	2	1,024	57	29,564	530	234,347	112	71,022	722	354,217

(*a*) Includes areas burnt in unprotected forest tracts.
(*b*) Less than one acre.

Appendix A.—Comparative statement of number and origin of fires that occurred during 1919-20— *cont.*

District.	A. Fires caused by accident or through carelessness in burning fire lines.		B. Fires entering the forests by crossing exterior fire lines.		C. Fires beginning inside the reserves or fire traced areas.														Causes unknown.		Total of A, B and C and causes unknown.	
					Owing to carelessness or accident.								By intentional firing.									
					By workmen engaged in the forests or by purchasers of forest produce and by hay cutters.		By villagers, travellers, etc., passing through the forests.		By railway engines.		By lightning or fire balloons.		In order to obtain new grass.		In order to turn out game or to reduce cover.		Maliciously fired.		Total.					
	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Southern Circle.																						
Vellore, North ..	..	..	4	456	2	7	1	2	..	..	..	..	..	..	..	..	17	2,744	20	2,753	84	8,242	108	11,451
Do. South ..	..	..	..	..	..	..	1	1	..	..	..	..	27	828	..	..	..	..	28	829	30	2,212	58	3,041
Do. West ..	..	..	1	80	1	22	5	392	..	..	..	..	1	210	8	322	11	315	26	1,261	24	2,118	51	3,459
South Arcot ..	1	1	1	3	1	..	..	..	..	..	..	..	1	2	..	..	..	..	2	2	1	1	5	7
Salem, North ..	3	11	..	..	..	..	21	950	..	..	..	..	..	..	1	9	3	171	25	1,130	39	2,732	67	3,873
Do. South ..	..	..	..	..	..	..	9	116	..	..	..	..	23	1,393	..	..	..	..	32	1,509	18	623	50	2,132
Trichinopoly ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	723	10	723
Madura	..	..	11	1,509	..	..	5	121	..	..	..	..	15	831	..	..	18	2,083	38	3,035	61	5,110	110	9,654
Tinnevelly ..	2	2	9	1,359	1	35	9	198	..	..	7	95	1	150	12	2,130	..	..	30	2,608	4	285	45	4,254
Total ..	6	14	26	3,407	5	64	51	1,780	..	..	7	95	68	3,414	21	2,461	49	5,313	201	13,127	271	22,046	504	38,594
Western Circle.																						
Mangalore, North.	5	142	12	57	..	..	26	406	..	..	2	10	5	32	..	..	3	18	36	466	19	575	72	1,240
Do. South.	7	79	38	1,147	..	..	24	944	..	..	..	..	15	10	9	486	7	463	55	1,903	25	1,619	125	4,748
Malabar, North ..	2	5	6	30,045	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..	8	30,050
Do. South ..	1	20	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	1	1	..	..	2	21
The Nilgiris* ..	1	235	6	30,053	2	1,346	12	431	1	1	..	..	..	..	..	..	..	..	15	1,778	10	1,915	*32	33,981
Kollegal ..	..	..	..	..	..	..	6	1,310	..	..	..	..	..	..	32	14,775	..	..	38	16,085	13	2,050	51	18,135
Coimbatore, North.	2	62	..	..	..	..	23	4,061	..	..	..	..	11	1,000	..	..	1	15	35	5,076	25	9,004	62	14,142
Do. Central.	6	243	6	548	..	..	..	..	2	15	..	..	..	..	1	142	..	..	3	157	19	420	34	1,368
Do. South.	..	.	4	3,047	2	116	2	246	..	..	..	..	3	2,726	..	..	1	7,188	8	10,276	..	..	12	13,323
Total ..	24	786	72	64,897	4	1,462	93	7,398	3	16	2	10	35	3,769	42	15,403	12	7,684	191	35,742	111	15,583	398	117,008
Grand total for 1919-20.	49	10,312	231	224,749	23	5,396	320	68,382	18	3,401	13	546	445	198,447	108	51,452	153	122,849	1,078	450,473	831	201,082	1,989	886,619
Grand total for 1918-19.	53	8,368	150	139,626	55	28,848	276	44,067	14	1,185	7	197	308	69,809	78	37,648	138	35,595	876	217,349	419	136,541	1,498	501,884

* Includes the number of fires not under special protection.

APPENDIX B.—Comparative statement of impounded cattle for 1919–20.

District.	Number of cattle impounded.		Average for three years ending 1918–19.
	1918–19.	1919–20.	
Northern Circle.			
Ganjām	1,657	1,780	2,027
Vizagapatam	917	564	918
Gōdāvari, Upper	680	936	505
Do. Lower	677	288	736
Kistna	3,819	3,235	4,167
Kurnool, East	5,592	6,200	6,247
Do. South	3,596	3,556	2,438
Do. West	8,257	6,836	5,341
Total	25,145	23,395	22,379
Central Circle.			
Bellary	8,543	6,431	7,293
Anantapur	11,958	8,441	11,652
Guntūr	23,674	19,931	23,528
Cuddapah, North	1,576	2,169	2,203
Do. South	1,100	2,021	1,305
Do West	8,124	8,449	6,413
Nellore	8,622	8,793	7,361
Chingleput	2,544	4,894	3,334
Chittoor	7,357	11,120	6,496
Total	73,498	72,249	69,585
Southern Circle.			
Vellore, North	5,400	5,418	6,439
Do. South	5,477	4,090	4,200
Do. West	2,226	2,625	2,046
South Arcot	3,479	5,571	5,336
Salem, North	2,911	2,245	2,695
Do. South	3,559	1,983	3,366
Trichinopoly	6,420	7,599	3,839
Madura	5,093	5,218	4,221
Tinnevelly	2,693	2,559	2,573
Total	37,258	37,308	34,715
Western Circle.			
Mangalore, North	313	436	451
Do. South	462	406	466
Malabar, North	98	52	65
Do. South	473	256	270
The Nilgiris	464	268	645
Kollegal	2,884	3,886	1,412
Coimbatore, North	4,595	3,662	3,611
Do. Central	1,756	2,274	1,361
Do. South	439	587	591
Total	11,484	11,827	8,872
Grand total, Presidency	147,385	144,779	135,551

Annual Form No. 65.

Forest Department, Madras Presidency.

Area of reserved forests and reserved lands during 1919-20

Districts.	Area of reserved forests.						Area of reserved lands.						Total area of reserved forests and reserved lands in square miles.
	Area on 1st July 1919.		Added during the year.	Excluded during the year.	Area on 30th June 1920.		Area on 1st July 1919.		Added during the year.	Excluded during the year.	Area on 30th June 1920.		
	Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.	Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Northern Circle.													
Ganjam	398,842	623	113	..	398,955	623	1,460	2	..	113	1,347	2	625
Vizagapatam	199,371	312	6	(*a*) 37 (*b*) 2,433	196,907	308	1,353	(*e*) 2	86	6	1,413	(*e*) 2	310
Godavari, Upper	278,462	435	61,598	..	340,060	531	255,523	399	..	(*d*) 61,598 149	193,776	303	834
Do. Lower	254,970	398	(*b*) 439	..	255,409	399	55,880	87	(*b*) 2,961	..	58,841	92	491
Kistna	169,196	264	..	..	169,196	264	381	1	..	..	381	(*e*) 1	265
Kurnool, East	620,784	970	..	..	620,784	970	..	..	..	..	..	..	970
Do. South	486,664	760	..	..	486,664	761	..	..	..	..	..	..	761
Do. West	549,785	859	..	(*a*) 1,231	548,554	857	..	..	..	..	..	..	857
Total ..	2,958,074	4,621	62,156	3,701	3,016,529	(*f*) & (*g*) 4,713	314,577	491	3,047	61,866	255,758	400	5,113
Central Circle.													
Bellary	384,702	601	..	18,936	365,766	572	2,060	3	46	207	1,899	3	575
Anantapur	479,542	749	..	1,772	477,770	747	..	..	..	..	..	..	747
Guntur	515,609	806	..	3,379	512,230	800	..	..	..	..	..	..	800
Cuddapah, North	381,157	595	72	..	381,229	(*h*) 596	396	1	..	72	324	1	597
Do. South	295,484	462	19	..	295,503	462	133 (*b*) — 3	..	..	19	111	..	462
Do. West	477,939	747	1,093	22	479,010	748	3,374 (*b*) + 3	5	..	1,093	2,284	4	752
Nellore	460,761	720	25	454	460,332	719	6,848	11	..	25	6,823	11	730
Chingleput	132,218	207	..	1	132,217	207	37	..	..	..	37	..	207
Chittoor	529,550	827	(*g*) ..	1,237	528,313	825	(*g*) ..	..	3	(*g*) ..	3	..	825
Total ..	3,656,962	5,714	1,209	25,801	3,632,370	5,676	12,848	20	49	1,416	11,481	19	5,695

(*a*) Disafforested.
(*b*) Rectification of area.
(*e*) Leased forests.
(*d*) Excluded at Settlement.
(*e*) Notified under section 26 of the Forest Act.
(*f*) The total area in column 6 works out to 4,713 square miles; the deficit of one square mile is due to the exclusion of fractions below half a square mile in the district figures.
(*g*) Below half an acre.
(*h*) Corrected in the Chief Conservator's office.

Area of reserved forests and reserved lands during 1919-20—*cont.*

District.	Area of reserved forests.						Area of reserved lands.						Total area of reserved forests and reserved lands in square miles.
	Area on 1st July 1919.		Added during the year.	Excluded or transferred to other heads.	Area on 30th June 1920.		Area on 1st July 1919.		Added during the year.	Excluded during the year.	Area on 30th June 1920.		
	Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.	Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Southern Circle.													
Vellore, North	294,950	461	672	(c) 2,375	293,247	458	801	2	31	(b) 672	160	..	458
Do. South	267,790	419	3	(c) 638	267,155	417	3	..	349	(b) 3	349	1	418
Do. West	209,953	328	224	..	210,177	328	224	..	..	(b) 224	..	..	328
South Arcot	179,902	281	..	(c) 4,001	175,901	275	..	..	..	..	..	..	275
Salem, North	511,478	799	24,412	(c) 80	535,810	837	24,629	(i) 38	..	(b) 24,412	217	..	837
Do. South	357,600	558	..	..	357,600	(h) 559	15,090	24	11,846	..	26,936	42	601
Trichinopoly	197,941	309	(a) 422 8	(c) 54	198,317	310	12	..	..	(b) 8	4	..	310
Madura	422,352	660	..	..	422,352	660	..	..	..	..	..	..	660
Tinnevelly	274,172	428	183	(c) 2,481	271,874	425	1,485	2	..	(b) 183	1,302	2	427
Total ..	2,716,138	4,245	25,924	9,629	2,732,433	(h) 4,269	42,244	(j) 66	12,226	25,502	28,968	45	4,314
Western Circle.													
Mangalore, North . ..	231,978	362	81	..	232,059	362	81	..	8	(b) 81	8	..	362
Do. South	278,800	436	..	..	278,800	436	..	..	..	..	..	..	436
Malabar, North	168,424	263	..	..	168,424	263	22	..	..	..	22	..	263
Do. South	92,231	144	..	..	92,231	144	12,854	20	..	..	12,854	20	164
The Nilgiris	297,410	465	1,430	(c) 161	298,679	467	(d) 51,097 (e) 2,851	80 4	258 ..	(b) 1,430 (f) 607	42,318 2,851	77 4	548
Kollegal	467,703	731	..	..	467,703	731	..	..	..	..	..	..	731
Coimbatore, North ..	586,712	917	127	..	586,839	917	127	1	..	127	..	..	917
Do. Central ..	231,768	362	1	..	231,769	362	11	..	..	1	10	..	362
Do. South ..	290,388	454	..	..	290,388	454	..	..	..	..	..	..	454
Total ..	2,645,414	4,134	1,639	161	2,646,892	4,136	67,043	105	266	2,246	65,063	101	4,237
Grand total, Presidency ..	11,976,588	18,712	90,928	39,292	12,028,224	18,794	436,712	682	15,588	91,030	361,270	565	19,359

(a) 422 acres of Sengattur Extension omitted to be included in previous return and now added.
(b) Transferred to reserved forest.
(c) Disafforested.
(d) Includes the area of Mudumalai and Kumbarakolli forests (47,804 acres) notified under section 4 during the year.
(e) Toda patta lands.
(f) Handed over to the Mysore Darbar in accordance with the boundary dispute of 1898.
(h) Corrected in the Chief Conservator's office.
(i) As per correct calculation.
(j) Works out to 66 square miles, and not 65 square miles as shown in the circle return.

ANNUAL FORM No. 66.

Forest Department, Madras Presidency.

Progress made in forest settlements during the year 1919–20.

Forest district.	Name of forest.	Area in square miles.			Cost during the year.		Entire cost per square mile of areas finally settled.	Government notification of settlement.	
		Finally settled during the year.	In hand at commencement of the year.	Taken in hand during the year.	In forest accounts.	In other accounts.		Number.	Date.
	Northern Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	RS.				
Ganjam ..	Block I, Part of Galleri extension No. I.	..	0·057	..	..	..	..	..	....
	Block II, Galleri extension No. I.	..	0·168	.	..	..	..	..	....
	Block III, Galleri extension No. I.	..	0·029	..	..	..	..	..	....
	Block IV, Galleri extension No. I.	..	1·060	..	..	..	..	..	....
	Block V, Kullada extension No. I.	..	0·685	..	..	..	..	..	....
	Ambazara extension No. I (Gobopodoro enclosure).	0·162	..	..	..	..	.	110	17th March 1920.
	Chendragiri extension (Kutnikuppa bit A/2).	..	0·105	..	..	..	..	..	..
	Extension of Pippalaponka reserved forest.	0·015	..	..	..	..	..	19	9th Jan. 1920.
Vizagapatam.	Sitakhandi reserve extension block I.	0·009	..	..	..	..	..	377	15th Oct. 1919.
	Madalammakonda extension block I.	..	..	0·056	..	..	..	..	..
	Dharakonda extension block I.	..	..	0·078	..	..	..	..	..
Gōdāvari, Upper.	Nugur..	..	246·610	..	..	..	..	..	..
	Pedamidisileru	96·480 (*a*)—·230	..	..	..	..	..	399	4th Nov. 1919.
	Cherla	..	56·160	..	..	..	..	..	..
Gōdāvari, Lower.	Coringa extension	..	74·860 (*b*) 4·632	..	..	..	..	..	..
	Birampalli	..	2·804	..	..	..	..	..	..
	Vmeulakonda	..	5·244	..	..	..	..	..	..
	Palam	..	2·083	..	..	..	..	..	..
	Nurupudi	..	2·315	..	..	..	..	..	..
	Total ..	96·436	396·812	0·134	..	..	..	..	....
	Central Circle.								..
Bellary ..	Daroji tank shore	..	2·89		..	..	..	..	
	Addition of enclosures in Jangikalgutta Jittinakatta and Sogi reserves.	..	..	0·072	..	..	..	438	27th Nov. 1919.
Cuddapah, North.	Ganugapenta extension B block.	0·007	..	..		..	..	480	23rd Mar. 1920.
	Dasaripalli	0·001	0·16	..		..	..	480	Do.
	Kavalakuntla extension B ..	0·002	..	..	1,041	..	..	480	Do.
	Kalasapad extension	..	0·027	..		..	..	..	Do.
	Dasarapalli extension ..	0·017	0·3	..		..	..	480	23rd Mar. 1920.
	Lankamalai extension ..	0·07	0·02	..		..	..	961	29th July 1919.
	Lankamalai	0·003	0·002	..		..	..	480	23rd Mar. 1920.
Cuddapah, South.	Kokiletikanama extension B.	0·0083	..	..		..	..	103	13th ,,
	Kodur hill extension.. ..	0·0031	..	..		..	..	89	2nd ,,
	Chitvel extension B	0·002	..	0·03	505	..	..	103	13th ,,
	Chitvel extension A-2 ..	0·0051	..	..		..	..	103	Do.
	Cheyyavaram extension ..	..	..	0·045		..	..	..	..
	Chitvel extension	..	..	0·005		..	..	..	..
Cuddapah, West.	Putlampalli shrotriyam R.F. (i.e., addition to Palkonda extension F.).	..	2·76	..		..	..	..	.
	Fields of Hasanapuram village within Palakonda R.F.	..	0·349	..		..	..	..	..
	Fields of Vangimalla within Palakonda extension C.	..	0·209	..		..	..	..	..
	Fields of Hasanapuram village within Palakonda extension C.	..	0·065	..		..	..	..	..
	Addition to Surabbu .. .	0·02	..	..		..	..	26	17th Jan. 1920.
	Fields of Gopagudipalli village within Idupulapaya reserve.	..	0·012	..	9336	..	..	..	..
	Fields of Guval cheruva village within Idupulapaya reserve.	..	0·007	..		..	..	..	
	Fields of Cheelakampalli village within Idupulapaya reserve.	..	0·006	..		..	..	..	..
	Fields of Chenchuvaripenta village within Idupulapaya reserve.	..	0·014	..		..	..	..	..

(*a*) Excluded at settlement. (*b*) Rectification of area.

Progress made in forest settlements during the year 1919–20—*cont.*

Forest district.	Name of forest.	Area in square miles.			Cost during the year.		Entire cost per square mile of areas finally settled.	Government notification of settlement.	
		Finally settled during the year.	In hand at commencement of the year.	Taken in hand during the year.	In forest accounts.	In other accounts.		Number.	Date.
	Central Circle—cont.	SQ. MLS.	SQ. MLS.	SQ. MLS.	RS.				
Cuddapah, West—*cont.*	Fields of Brahmana Erragudipalli within Idupulapaya reserve.	..	0·031	..	..	..	..	..	..
	Do. do.	..	0·062	..		..	..	..	..
	Fields in Machupalli within Kanamalapalli extension reserve.	..	0·0049	..		..	..	..	..
	Fields in Madhavaram village in Konarajupalli extension reserve.	0·0031	..	..	..	..	..	39	20th Jan. 1920.
	Fields in Chintarajupalli in Vontimitta extension reserve.	0·0121	..	..		..	..	64	12th Feb. 1920.
	Do. do.	..	0·045	..		..	..	..	..
	Ganganapalli Idupulapaya addition.	1·65	..	..		..	..	267	23rd June 1919.
	Fields of Nandimandalam village within Ganganapalli reserve.	0·018	..	..		..	..	102	11th Mar. 1920.
Nellore ..	Addition to Prabhagiripatnam R.F.	0·040	..	..	..	..	..	B.P. 411	30th July 1919.
	Addition to Yellasiri R.F. ..	..	0·025	..		..	..	..	..
	Do. Tummalapenta, West.	..	0·015	..		..	..	..	..
	Do. Tummalapenta, North.	..	0 005	..		..	..	..	..
	Do. Chinna avalur extension.	..	0·015	..	78	..	..	..	..
	Do. Veligandla ..	..	0·015	..		..	..	..	..
	Rapur Veligandla A-1 extension.	..	10·583	..		..	..	..	..
Chingleput.	Kattankolattur extension II.	..	0·017	..		..	..	..	..
	Tirukalikundram extension II.	..	..	0·041	785	..	..	..	..
Chittoor ..	Addition to Whiteside's Garden.	0·007	..	..		..	..	G.O. Mis. 80, Rev. (Spl).	15th Jan. 1920.
	Addition to Santhapet extension A. reserve.	..	..	0·005	6	..	..	9	23rd Dec. 1919.
	Total ..	1·8777	17·6419	0·198	11,751	..	..	..	..
	Southern Circle.								
Vellore, North.	Kilmirnal	0·23	0·23	..	..	..	..	G.O Mis. 1885.	28th Oct. 1919.
	Vannivedu	0·09	0·09	..	..	..	..	Do.	Do.
	Tiruvallam*	* 0·73	0·68	..	..	..	..	G.O. Mis. 1865.	3rd May 1919.
Vellore, South.	Ammundi	..	0·25	..	..	..	..	..	..
	Malayalam	..	0·35	..	..	..	..	Notifications 313, 314 315, and 316.	*Fort St. George Gazette*, 12th August 1919, pages 1000 to 1009.
	Santavasal	..	0·15	..	..	..	..		
	Uchimalai	0·01	0·01	..	..	..	..	Notification 458	10th Dec. 1919.
Vellore, West.	Mambakkam extension reserve.	0·35	0·35	..	..	..	..	Notification 378.	15th Oct. 1919. *Fort St. George Gazette*, 21st October 1919, Part 1 page 1275.
South Arcot ..	....	..	..	..	..	..	..	..	....
Salem, North.	Denkanikota extension ..	1·53	1·53	..	..	..	..	Notifications 447, 448, 449 and 450.	3rd Nov. 1919, *Fort St. George Gazette*, 9th December 1919, pages 1453 to 1459.
	Aivur extension	6·13	6·13	..	..	..	..		
	Udaidurgam	17·83	17·83	..	..	..	..		
	Marandahalli extension ..	12·65	12·65	..	..	..	..		
		38·14 or 38 sq. mls.	38·14 or 38 sq. mls.						
	Sholapadi extension	..	0·27	..	..	..	..	..	
	Varattanapalli extension ..	..	0·07	..	..	..	..	..	

* Differences is due to actual survey preparatory to section 16 notification.

Progress made in forest settlements during the year 1919-20—*cont.*

Forest districts.	Name of forest.	Area in square miles.			Cost during year.		Entire cost per square mile of areas finally settled.	Government notification of settlement.	
		Finally settled during year.	In hand at commencement of year.	Taken in hand during year.	In forest accounts.	In other accounts.		Number.	Date.
	Southern Circle—cont.	SQ. MLS.	SQ. MLS.	SQ. MLS.	RS.				
Salem, South.	Arana, Tirtagiri	..	5·92	..	..	..	..	..	..
	Jarugumalai	..	11·94	..	..	..	..	..	..
	Pallipatti extension	..	* 5·77	..	..	..	..	..	..
	Veppadi	..	..	18·45	..	..	..	305	*Fort St. George Gazette*, dated 5th August 1919, page 977. and 979, Part I.
	Vedambiam	..			..	..	..	..	..
	Vengamundi	..			..	..	..	..	..
	Venjarai	..			..	..	..	..	..
	Peria Shola	..			..	..	..	..	..
	Atturmanmalai	..			..	..	..	76	*Fort St. George Gazette*, dated 24th February 1919, page 340 Part I.
	Kavaramalai extension	..	..	0·01	..	..	..	468	*Fort St. George Gazette*, dated 23rd December 1919, page 556 Part I
Madura.	....	..	..	..	..	..	..	..	....
Trichinopoly.	Amayapuram	0·01	0·01	..	..	..	..	104	16th Mar. 1920.
	Methalamalai	..	0·01	..	..	..	..	B.P.F. Mis. 277.	9th May 1919.
Tinnevelly.	Karumandiamman Shola and Mahendragiri.	..	0·16	..	..	..	..	..	....
	Mullkadu block	..	1·48	..	..	..	..	..	
	Hare Island for Tuticorin harbour.	..	0·22	..	..	..	..	..	....
	Punnadi Island for Tuticorin harbour.	..	0·16	..	..	..	..	..	....
	Hope estate	0·29	..	..	2,998	..	..	17	9th Jan. 1920 *Fort St. George Gazette*, dated 13th January 1920, Part I, page 112.
	Total	39·85	66·26	18·46	2,998	..	..	..	..
	Western Circle.								
Mangalore, North.	Doddinamane extension No. I.	0·052	0·052	..	..	..	..	90	25th Feb. 1920.
	Mettukallagudde extension No. I.	0·074	0·074	..	..	..	..	467	17th Dec. 1919.
	Kursegudde extension No. I.	(a)	(a)	..	36	..	..	88	25th Feb. 1920.
	Naravi extension No. VIII	..	..	0·012	.	..	..	470	19th Dec. 1919.
The Nilgiris.	Rangaswami Peak	2·23	2·23	..	..	..	..	5	23rd Dec. 1919.
	Arambi addition No. I	..	·12	..	..	..	..	..	....
	Mudumalai	..	..	74·69		..	..	355	18th Sep. 1919.
	Addition to Kalhutti reserve.	..	..	0·17	..	..	..	212	28th June 1920.
	Do. to Wenlock downs reserve.	..	..	0·22	..	..	..	218	Do.
Coimbatore, North.	Enclosures in North Bargur reserve and its additions.	0·198	0·198	..	..	..	..	206	27th May 1919.
Coimbatore, Central.	Thamburatti Pottai addition No. I.	..	·011	..	805	..	..	..	....
	Dhoni extension No. I	0·001	·001	..	..	..	..	300	22nd July 1919.
	Nellimalai addition No. I	..	·003	..	157	..	..	..	....
	Total	2·555	2·689	75·102	998	..	..	..	..
	Grand total, Presidency	140·71	483·40	93·89	15,747	..	..	..	..

NOTE.—No expenditure incurred in Forest Settlement during the year except in Tinnevelly.

* The area as per last years return is 5 72, and the excess is due to calculation of area after Settlement Officer's check.

(a) Below one acre.

ANNUAL FORM NO. 67.

Forest Department, Madras Presidency.

Record of demarcation and maintenance of boundaries during 1919–20.

District.	Length of boundaries artificially demarcated during the year.	Length of previously existing boundaries repaired.	Length of previously existing boundaries not repaired.	Total length of artificially marked boundaries at the close of the year.	Length of boundaries still to be demarcated at the close of the year.	Length of natural boundaries not requiring artificial marks.	Total length of boundaries at the close of the year.	Expenditure on demarcation during the year.	
								On new work.	On repairs.
Northern Circle.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	RS.	RS.
Ganjām	*	9 (*a*) 1,359	..	1,368	..	80	1,448	4	14 (*e*) 12
Vizagapatam ..	..	(*a*) 564	..	564	..	19	583	..	..
Gōdāvari, Upper ..	3 (*b*) 2	† 409 (*b*) 44	..	458	..	143 (*b*) 5	606	434	80 (*e*) 584
Do. Lower ..	..	5 (*a*) 718	..	723	..	51	774	..	51 (*e*) 350
Kistna	..	7 (*a*) 428	112	547	..	40	587	..	188
Kurnool, East ..	14	15 (*a*) 533 (*c*) 45	..	607	5	48	660	136	144
Do. South ..	..	(*a*) 604	28	632	..	5	637	..	..
Do. West ..	..	178 (*a*) 194	550 (*d*) — 4	918	..	100	1,018	..	875 (*e*) 11
Total ..	19	667 (*a*) 4,400 (*c*) 45	686	5,817	5	491	6,313	574	1,352 (*e*) 957
Central Circle.									
Bellary	..	95 (*d*) 1,409	207 (*a*)— 60 (*b*)— 147	1,504	(*c*) 11	..	1,515	..	1,552
Anantapur	..	62 (*d*) 1,725	59 (*b*)— 25	1,821	..	..	1,821	..	394
Guntūr	..	10	1,314 (*b*)— 15	1,309	..	..	1,309	..	283
Cuddapah, North ..	..	(*d*) 219	341	560	..	13	573	..	163
Do. South ..	..	(*d*) 294	32	326	..	40	366	..	..
Do. West ..	..	(*d*) 497 4	898	1,399	..	22	1,421	..	75
Nellore	..	(*d*) 406 99	1,469 (*b*)— 2	1,972	..	84	2,056	16	1,203
Chingleput	..	854	..	854	..	..	854	..	1,317
Chittoor ..	(*e*) 1 (*f*) 1	(*d*) 1,419 19	10 (*b*)— 5	1,445	..	60	1,505	58	427
Total ..	2	(*g*) 7,112	4,076	11,190	11	219	11,420	74	5,414

Note for Northern Circle.

* Less than one mile.
† Cleared by hill tribes for fire protection, the cost being debited to A VIII (*f*).
(*a*) Cleared by subordinates free of cost.
(*b*) Length of the boundary of Peddamidisileru reserved forest finally notified during the year.
(*c*) Cleared by Panchayatdars.
(*d*) Length of boundaries of forests disafforested.
(*e*) Cost of works other than boundaries of forests finally notified.

Note for Central Circle.

(*a*) Wrongly included in previous year's return and now excluded.
(*b*) Length of boundaries of forest disafforested.
(*c*) Represents length of boundaries between disafforested and remaining portions of reserves when they were partly disafforested and which requires to be demarcated.
(*d*) Cleared by subordinates free of cost.
(*e*) Represents length of disafforested portion demarcated in Chandragiri Range.
(*f*) Represents extra length obtained by correctly demarcating a reserve in Palmaner Range.
(*g*) About 98 miles of this were permanently demarcated during the year.

Record of demarcation and maintenance of boundaries during 1919-20—*cont*

District.	Length of boundaries artificially demarcated during the year.	Length of previously existing boundaries repaired.	Length of previously existing boundaries not repaired.	Total length of artificially marked boundaries at the close of the year.	Length of boundaries still to be demarcated at the close of year. *	Length of natural boundaries not requiring artificial marks.	Total length of boundaries at the close of the year.	Expenditure on demarcation during the year.	
								On new works.	On repairs.
Southern Circle.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	RS.	RS.
Vellore, North ..	..	1,074 (*a*)—2	..	1,072	..	11	1,083	..	350
Do. South ..	(*b*) ..	708	..	708	..	15	723	2	11
Do. West ..	2	503	..	505	..	13	518	33	196
South Arcot	..	890 (*a*) — 33	..	857	..	..	857	..	539
Salem, North ..	..	964	407	1,371	..	40	1,411	8	22
Do. South ..	..	1,081	..	1,081	..	5	1,086	(*c*) 300	25
Trichinopoly	13	867	51	931	51	..	982	146	153
Madura	14	972	572	1,558	1	178	1,737	670	88
Tinnevelly	..	..	501 (*a*)—10	491	..	14	505	..	150
Total ..	29	7,059 (*a*) — 35	1,531 (*a*)— 10	8,574	52	276	8,902	1,159	1,534
Western Circle.									
Mangalore, North .	..	7	1,226	1,233	..	103	1,336	..	318
Do. South ..	..	..	1,130	1,130	46	101	1,277	..	(*c*) 25
Malabar, North ..	10	(*a*) 186 (*b*) 26	984	1,206	2	36	1,244	929	..
Do. South ..	..	22 (*a*) 49	60	131	20	55	206	..	2,985 *
The Nilgiris	2	109	1,475	1,586	10	299	1,895	24	813
Kollegal	12	8	162	182	210	87	479	486	170
Coimbatore, North ..	12	(*b*) 484 *	83 *	579	101*	89	769	539	..
Do. Central.	..	7 (*b*) 139	425	571	27	50	648	..	681
Do. South ..	..	15 (*a*) 22 (*b*) 109	82	228	..	72	300	..	81
Total ..	36	168 (*a*) 257 (*b*) 758	5,627	6,846	416	892	8,154	1,978	5,073
Grand total, Presidency.	86	20,431	11,910	32,427	484	1,878	34,789	3,785	14,330

Southern Circle.
(*a*) Reduction owing to disafforestation.
(*b*) Less than half a mile.
(*c*) Amount spent on the demarcation of and cutting of lines in reserved lands.

Western Circle.
* Revised figures furnished by the District Forest Officer.
(*a*) Cleared for fire-protection, the cost being debited to *P*-VIII (*f*).
(*b*) Cleared by subordinates free of cost.
(*c*) Cost of clearing and planting cairns on coupe boundaries.

Annual Form No. 69.

Forest Department, Madras Presidency.

Progress made in working-plans during 1919–20.

District. (1)	Areas for which working-plans have been completed and approved by the Chief Conservator.		Areas for which working-plans are being compiled or have been compiled but not sanctioned.		Areas for which working-plans have still to be taken in hand.	Areas for which working-plans are not at present required.	Total forest area as per Form No. 65.
	At commencement of the year.	During the year.	At commencement of the year.	Taken in hand during the year.			
			Reserved forests.				
Northern Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Ganjām	623	..	..	..	..	..	623
Vizagapatam ..	131	55	..	62	42	18	308
Godāvari, Upper ..	165	..	..	..	366	..	531
Do. Lower ..	291 (a)+1	..	..	..	107	..	399
Kistna	240	..	..	..	..	24	264
Kurnool, East ..	147	..	182 (c) — 6	..	641 (c) + 6	..	970
Do. South ..	679	..	82	..	..	..	761
Do. West ..	462 (b)—2	..	..	..	..	397	857
Total ..	2,737	55	258	62	1,162	439	4,713
			Reserved lands.				
Ganjām	..	..	..	2	..	..	2
Vizagapatam ..	..	..	..	..	(d) 2	..	(d) 2
Godavari, Upper ..	..	..	..	..	..	303	303
Do. Lower ..	..	..	..	..	92	..	92
Kistna	..	..	..	..	..	1	1
Total ..	..	..		2	94	304	400
Grand total, Northern Circle.	2,737	55	258	64	1,256	743	5,113
Central Circle.							
Bellary	(a) 51	..	(b) 90	..	(a) 290	(a) 144	575
Anantapur ..	(c) 386	..	..	..	(c) 361	..	747
Guntūr	..	..	243	19	(a) 538	..	800
Cuddapah, North ..	(b) 49	..	17	..	(b) 531	..	597
Do. South ..	107	..	..	..	..	355	462
Do. West ..	35	..	28	..	685	4	752
Nellore	12	..	192	(b) 38	(b) 349	(b) 139	730
Chingleput ..	185	..	..	..	..	22	207
Chittoor	33	..	(b) 95	..	(c) and (b) 697	..	825
Total ..	858	..	665	57	3,451	664	5,695
			Reserved forests.				
Southern Circle.							
Vellore, North ..	408 (a) —18 (b) + 2	(a) 18	2	..	..	46	458
Do. South ..	411 (c) — 1	..	..	..	7	..	417
Do. West ..	328	..	..	..	..	..	328
South Arcot .	115 (c) — 1	..	52	3	..	106	275
Salem, North ..	262	..	366	..	209	..	837
Do. South ..	495	..	63	..	..	..	558
Trichinopoly ..	202	..	(d) 19	47	..	42	310
Madura	351	..	..	..	297	12	660
Tinnevelly ..	237 (c) — 3	..	..	..	16	175	425
Total ..	2,788	18	502	50	529	381	(e) 4,268

Note for Northern Circle.
- (a) Rectification of area.
- (b) Disafforested.
- (c) Correct area furnished by the District Forest Officer.
- (d) Leased forests

Note for Central Circle.
- (a) Difference in area is due to cancelment of notification and disafforestation.
- (b) Revised figures furnished by the District Forest Officer.
- (c) Difference is due to revision of working-plan, disafforestation of some areas and to the adoption of correct figures.

Note for Southern Circle
- (a) Represents the area of Naickaneri and Panankatteri Working Circles for which a revised working scheme was sanctioned during the year.
- (b) Area of Palar plantations notified during the year for which a working-plan had already been sanctioned.
- (c) Areas disafforested.
- (d) Revised figure furnished by the District Forest Officer.
- (e) The difference between this figure and that shown in Form No. 65 has not been explained.

Progress made in working-plans during 1919–20—*cont.*

District.	Areas for which working-plans have been completed and approved by the Chief Conservator.		Areas for which working-plans are being compiled or have been compiled but not sanctioned.		Areas for which working-plans have still to be taken in hand.	Areas for which working-plans are not at present required.	Total forest area as per Form No. 65.
	At commencement of the year.	During the year.	At commencement of the year.	Taken in hand during the year.			
			Reserved forests.				
Western Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Mangalore, North.	358	..	..	..	4	..	362
Do. South.	436	..	..	..	..	..	436
Malabar, North ..	178	..	..	..	85	..	263
Do. South ..	7	..	96	..	..	37	140
The Nilgiris ..	107	..	..	..	..	360	467
Kollegal	53	..	22	..	160	496	731
Coimbatore, North.	330	..	31	..	556	..	917
Do. Central.	165	..	.. *	..	98	99	362
Do. South.	93	..	..	..	334	..	427
Total ..	1,727	..	149	..	1,237	992	4,105
			Reserved lands.				
Mangalore, North..	..				(*a*) ..	..	(*a*) ..
The Nilgiris ..	(*c*) 75	..	..	..	1	(*b*) 5	81
Coimbatore, Central.	(*a*) ..	..	..	..	(*a*) ..	..	(*a*) ..
Total ..	75	..	..	..	1	5	81
			Leased forests.				
Malabar, South ..	24	..	..	..	..	..	24
Coimbatore, South.	27	..	..	..	..	..	27
Total ..	51	..	..	..	..	..	51
Grand total, W.C.	1,853	..	149	..	1,238	997	4,237
Grand total, Presidency.	8,236	73	1,574	171	6,474	2,785	19,313

(*a*) Less than one square mile.

(*b*) Includes 4 square miles of Todapatta lands.

(*c*) Of the 76 square miles shown under leased forest in the last year's return one square mile was handed over to the Mysore Darbar according to the boundary settlement of 1898 and the balance transferred to Reserved lands.

* 24 square miles shown in the last year's return is omitted as the preparation of the working-plan is given up

Annual Form No. 70.

Forest Department, Madras Presidency.

Communications and Buildings during 1919–20.

District.	Roads (including bridle-paths and culverts)				Buildings.		Other works.*	
	New works.		Repairs.		Cost of new works.	Cost of repairs.	Cost of new works.	Cost of repairs.
	Length.	Cost.	Length.	Cost.				
Northern Circle.	M. F. CH.	Rs.	M. F. CH.	Rs.	Rs.	Rs.	Rs.	Rs.
Ganjam	10 4 7	2,446	41 7 0	1,456 (a) 35	4,544	1,416 (c) 1,753	360	9
Vizagapatam	5 5 0	313	29 7 0	541	477	889 (c) 645	..	22
Gōdāvari, Upper ..	0 6 0	171 (b) 350	27 6 0	141	2,499	2,284 (c) 388	..	30
Do. Lower ..	..	..	55 0 0	2,218	595	2,311 (c) 1,252	..	..
Kistna	6 6 0	2,268	28 6 0	556	657	322 (c) 129	..	944
Kurnool, East	20 7 0	2,446	49 5 0	2,487	4,183	1,851	39	289
Do. South	..	..	63 0 0	3,364	1,705	753	..	122
Do. West	..	(b) 40	16 6 0	1,908	2,071	963 (c) 723	72 (d) —20	16
Total ..	44 4 7	8,034	312 5 0	12,706	16,731	15,679	451	1,432
Central Circle.								
Bellary	..	..	..	..	..	569 (a) 216	..	12
Anantapur	..	..	10 6 0	317	..	817 (a) 1,154	..	20
Guntūr	6 0 0	347	10 0 0	741	2,942	(a) 666 + 253	200	112
Cuddapah, North ..	12 3 47	2,790	21 6 3	819	1,020	1,784 (a 439	310	175
Do. South ..	7 5 14	2,593	53 7 16	3,802	11,358	1,946 (a) 159	..	267
Do. West	5 7 3	1,881	10 0 6	1,869	2,215	323 (a) 480	107	10
Nellore	12 0 0	(b) 528	37 4 0	472	1,760	1,725 (a) 762	596	24
Chingleput	2 1 6	287	20 6 0	633	3,989	565 (a) 712	..	206
Chittoor	0 0 70	1,261	42 3 0	2,696	4,830	2,278 (a) 1,033	575	134
Total ..	47 6 0	9,687	207 2 5	11,349	28,114	15,881	1,788	960
Southern Circle.								
Vellore, North	..	(a-i) 139	32 0 0	2,477	1,623	2,397 (b) + 355	649	98
Do. South	..	(a-i) 6	14 4 0	106	3,025	776 (b) + 170	112	13
Do. West	..	37 (d)—243	..	..	1,249	189 (b) + 273 (d) — 51	913	..
South Arcot	..	(a-i) 10	..	..	75	282 (b) + 426 (c) — 7 (d) — 35	17	..
Salem, North	..	..	47 0 0	1,323	170	2,337 (b) + 194	..	195 (d)+ 3
Do. South	9 6 6	756	43 0 0	1,317 (d) — 9	1,738	664 (b) + 498 (c) — 2	36	131 (c)— 20
Trichinopoly	3 0 0	988	86 0 0	2,880 (c)—1,461	1,459	1,040 (b) + 221	202	676
Madura	23 4 0	6,948	180 7 0	9,017 (b)+1162 (d)— 146	6,764	2,292 (b)+1,270 (d) — 3	(d) 472 (d)+139	89
Tinnevelly	3 3 0	905	43 0 0	2,356	120	1,986 (b) + 412 (d) + 26	88 (d) — 6	5
Forest Engineer	(a)22 0 0	(f) 89,125	13 6 0	4,583 (d)+ 33	..	..	..	..
Total ..	61 5 6	98,671	460 1 0	23,638	16,223	15,710	2,622	1,190

Note of Northern circle.
- (a) Difference between the audited and District Forest Officer's figures which is attributed to erroneous debit.
- (b) Cost of alignment of roads.
- (c) Cost of establishment.
- (d) Cash recovery of service payments.

Note of Central circle.
- (a) Represents cost of establishment.
- (b) Includes Rs. 162 spent on alignments of 14 miles of paths.

Note of Southern circle.
- (a) Corrected in the Chief Conservator's office. (a-i) Cost of alignment.
- (b) Cost of establishment. (c) Cash recovery of service payments.
- (d) Added or subtracted to tally with Accountant-General audited figures.
- (e) Land cess in the Pachamalai and Kollemalai hill villages contributed by Taluk and District Boards of the Trichinopoly and Salem districts for the maintenance of the bridle-paths on these hills.
- (f) Includes Rs. 850 spent on the investigation of the proposed Komattiyeri-Kuttathur road for a distance of 8 miles, Nadenur-Mandaparai road for a distance of 8 miles and Papanasam-Kodamadi road for a distance of 8 miles.

ANNUAL FORM No. 70.

Forest Department, Madras Presidency.

Communications and Buildings during 1919-20.

District.	Roads (including bridle-paths and culverts)				Buildings.		Other works.	
	New works.		Repairs.		Cost of new works.	Cost of repairs.	Cost of new works.	Cost of repairs.
	Length.	Cost.	Length.	Cost.				
Western Circle.	M. F. CH.	Rs.	M. F. CH.	Rs.	Rs.	Rs.	Rs.	Rs.
Mangalore, North † ..	10 4 0	2,318	26 5 0	691	286	248 (*a*) 21 (*b*) 114	821 * — 8	* 8
Do. South ..	12 0 0	2,655	32 0 0	896	3,738	1,964	279	335
Malabar, North	..	..	115 0 0	2,142	2,890	619 (*b*) 198	..	92
Do. South	9 6 0	1,534	57 0 0	5,238	7,988	1,518	250	28
The Nilgiris	1 0 0	3,317	66 0 0	2,272 (*d*) +48	3,091	2,043	279	47
Kollegal	10 0 0	1,642	71 1 0	2,627	2,958	1,173 (*b*) 272	401	25
Coimbatore, North ..	7 4 0	6,459	143 0 0	7,543	2,035	4,281 (*b*) 451	331	284
Do. Central ..	10 4 0	15,343	33 4 0	4,523	6,508	1,562 (*b*) 192	555	14
Do. South ..	..	(*c*) 270	26 6 0	5,561 (*c*) 251 (*b*) 296 *—16	3,212	1,974 (*b*) 184	2,403	266
Direction	..	..	..	..	..	..	..	*—9
Forest Engineer	..	(*e*) 407 (*d*)— 54	..	..	‡ 2,558	..	‡ 625	..
Total ..	61 2 0	33,891	571 0 0	32,072	35,264	16,805	5,936	1,090
Grand total, Presidency ..	215 2 3	1,50,283	1,551 0 0	79,765	96,332	64,075	10,797	4,672

* Cash recovery of service payments.
† Rs. 26 relating to expenditure on road wrongly debited to A vii (*b*) instead of to A vii(*a*).
‡ Debited to A vii (*a*).
(*a*) Land and House tax.
(*b*) Cost of establishment.
(*c*) Expenditure on construction etc. of bridges.
(*d*) Added or deducted to tally with audited figures.
(*e*) Rs. 353 spent on the investigation work of the Mount stuart ghat road.

Annual Form No. 71.

Forest Department, Madras Presidency.

Register of breaches of Forest Rules during 1919-20.

District.		Cases pending from 1918-19.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.
			Injury to forest by fire.	Unauthorized felling or appropriation of wood and minor forest produce.	Grazing without permission or in tracts in which grazing is prohibited.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
									Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Northern Circle.															
Ganjam ..	A ..	* 150	2	57	3	3	65	215	128	493	20	76	148	569	67
	B ..	* 70	1	331	41	12	385	455	276	865	58	228	334	1,093	121
	C ..	..	22	17	..	..	39		..	..	..	..	..	..	..
	Total ..	220	25	405	44	15	489	670	404	1,358	78	304	482	1,662	188
Vizagapatam.	A ..	* 117	2	120	15	5	142	259	220	700	21	138	241	838	18
	B ..	* 30	..	222	26	45	293	323	245	600	57	249	302	849	21
	C ..	..	8	2	..	..	10	..	..	..	..	..	..	..	..
	Total ..	147	10	344	41	50	445	582	465	1,300	78	387	543	1,687	39
Godavari, Upper.	A ..	* 15	..	8	2	8	18	33	20	27	6	10	26	37	7
	B ..	* 25	3	95	11	7	116	141	97	198	21	31	118	229	23
	C ..	..	23	..	..	..	23	..	..	..	..	..	..	..	..
	Total ..	40	26	103	13	15	157	174	117	225	27	41	144	266	30
Godavari, Lower.	A ..	* 48	..	44	2	5	51	99	61	195	19	103	80	298	19
	B ..	* 64	..	216	13	50	279	343	271	498	11	25	282	523	61
	C ..	..	54	1	..	..	55	..	..	..	..	..	..	..	..
	Total ..	112	54	261	15	55	385	442	332	693	30	128	362	821	80
Kistna	A ..	† 74	..	116	31	19	166	240	217	871	10	28	227	894	13
	B ..	† 45	..	254	192	25	471	516	347	816	121	395	468	1,211	48
	C ..	..	10	16	5	..	31	..	..	..	..	..	..	..	..
	Total ..	† 119	10	386	228	44	668	756	564	1,687	131	418	695	2,105	61
Kurnool, East.	A ..	* 17	..	21	36	2	59	76	54	163	4	20	58	183	18
	B ..	* 27	..	238	78	3	319	346	195	596	67	245	262	841	84
	C ..	..	58	3	..	..	61	..	..	..	..	..	..	..	..
	Total ..	44	58	262	114	5	439	422	249	759	71	265	320	1,024	102
Kurnool, South.	A ..	14	2	58	1	..	61	75	55	181	8	38	63	219	12
	B ..	35	..	228	70	..	298	333	282	785	27	43	309	828	24
	C ..	..	68	23	..	..	91	..	..	..	..	..	..	..	..
	Total	49	70	309	71	..	450	408	337	966	35	81	372	1,047	36
Kurnool, West.	A ..	* 44	3	72	12	10	97	141	94	268	9	41	103	309	38
	B ..	* 99	..	431	126	36	593	692	500	1,785	50	119	550	1,904	142
	C ..	..	42	53	1	4	100	..	..	..	..	..	..	..	..
	Total ..	143	45	556	139	50	790	833	594	2,053	59	160	653	2,213	180
Total,	A ..	479	9	496	102	52	659	1,138	849	2,898	97	449	946	3,347	192
	B ..	395	4	2,015	557	178	2,754	3,149	2,213	6,143	412	1,335	2,625	7,478	524
	C ..	..	285	115	6	4	410	..	..	..	..	..	..	..	..
Grand Total, Northern Circle.		874	298	2,626	665	234	3,823	4,287	3,062	9,041	509	1,784	3,571	10,825	716

A = Cases taken to Court. B = Cases compounded. C = Cases undetected.

* The variations between the closing balance of last year and these figures are due to transfers from B to A.

† Include seven cases relating to unreserved lands omitted from the previous year's return.

Register of breaches of Forest Rules during 1919-20—*cont.*

District.		Cases pending from 1918-19.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.
			Injury to forest by fire.	Unauthorized felling or appropriation of wood and minor forest produce.	Grazing without permission or in tracts in which grazing is prohibited.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
									Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Central Circle.															
Bellary ..	A ..	139	..	86	86	5	177	316	253	985	37	263	290	1,248	26
	B ..	127	..	165	213	19	397	524	341	1,030	45	147	386	1,177	138
	C ..	..	..	4	2	..	6	..	..	..	..	..	..	..	..
Total	..	(a) 266	..	255	301	24	580	840	594	2,015	82	410	676	2,425	164
Anantapur.	A ..	142	..	147	77	5	229	371	244	679	36	124	280	803	91
	B ..	75	..	281	175	6	462	537	413	972	39	143	452	1,115	85
	C ..	..	112	22	1	..	135	..	..	..	..	..	..	..	..
Total	..	217	112	450	253	11	826	908	657	1,651	75	267	732	1,918	176
Guntur ..	A ..	236	..	408	374	29	811	1,047	613	2,034	23	87	636	2,121	411
	B ..	372	..	855	728	26	1,609	1,981	1,458	4,425	99	312	1,557	4,737	424
	C ..	..	..	14	..	..	14	..	..	..	..	..	..	..	..
Total	..	608	..	1,277	1,102	55	2,434	3,028	2,071	6,459	122	399	2,193	6,858	835
Cuddapah, North.	A ..	8	1	43	6	13	63	71	46	225	15	38	61	263	10
	B ..	93	..	217	44	31	292	385	299	741	17	63	316	804	69
	C ..	..	13	21	..	..	34	..	..	..	..	..	..	..	..
Total	..	101	14	281	50	44	389	456	345	966	32	101	377	1,067	79
Cuddapah, South.	A ..	12	1	44	27	11	83	95	50	138	33	186	83	324	12
	B ..	19	1	144	79	10	234	253	213	502	22	77	235	579	18
	C ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	31	2	188	106	21	317	348	263	640	55	263	318	903	30
Cuddapah, West.	A ..	125	5	78	60	11	154	279	120	427	34	108	154	535	125
	B ..	67	1	284	139	23	447	514	388	832	32	74	420	906	94
	C ..	..	..	21	1	1	23	..	..	..	..	..	..	..	..
Total	..	192	6	383	200	35	624	793	508	1,259	66	182	574	1,441	219
Nellore ..	A ..	284	..	100	189	2	291	575	419	983	54	129	473	1,112	102
	B ..	430	..	388	590	4	982	1,412	970	2,152	54	158	1,024	2,310	388
	C ..	..	15	31	4	..	50	..	..	..	..	..	..	..	..
Total	..	714	15	519	783	6	1,323	1,987	1,389	3,135	108	287	1,497	3,422	490
Chingleput.	A ..	22	..	111	60	3	174	196	123	377	10	10	133	387	63
	B ..	42	..	447	291	2	740	782	662	1,132	29	91	691	1,223	91
	C ..	..	2	4	..	..	6	..	..	..	..	..	..	..	..
Total	..	64	2	562	351	5	920	978	785	1,509	39	101	824	1,610	154
Chittoor ..	A ..	41	..	109	93	39	241	282	214	627	18	111	232	738	50
	B ..	125	..	633	407	86	1,126	1,251	1,087	1,968	67	138	1,154	2,106	97
	C ..	..	95	16	7	2	120	..	..	..	..	..	..	..	..
Total	..	166	95	758	507	127	1,487	1,533	1,301	2,595	85	249	1,386	2,844	147
Total, Central Circle.	A ..	1,009	7	1,126	972	118	2,223	3,232	2,082	6,475	260	1,056	2,342	7,531	890
	B ..	1,350	2	3,414	2,666	207	6,289	7,639	5,831	13,754	404	1,203	6,235	14,957	1,404
	C ..	..	237	133	15	3	388	..	..	..	..	..	..	..	..
Grand Total, Central Circle.		2,359	246	4,673	3,653	328	8,900	10,871	7,913	20,229	664	2,259	8,577	22,488	2,294

A = Cases taken into Court. B = Cases compounded by the District Forest Officer. C = Cases undetected.

(a) The difference between the closing balance of 1918-19 and the opening balance of 1919-20 is due to 15 cases under A and 17 cases under B in unreserved lands having been erroneously shown by the District Forest Officer as pending in the last year's return.

Register of breaches of Forest Rules during 1919-20 —*cont.*

District.		Cases pending from 1918-1919.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.
			Injury to forest by fire.	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
									Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Southern Circle.															
North Vellore.	A ..	126	1	108	68	3	180	306	253	695	5	12	258	707	48
	B ..	273	2	653	294	7	956	1,229	998	1,765	40	88	1,038	1,853	191
	C ..	..	108	..	64	..	172	..	..	..	..	..	..	..	..
Total	..	399	111	761	426	10	1,308	1,535	1,251	2,460	45	100	1,296	2,560	239
South Vellore.	A ..	45	..	59	15	3	77	122	106	339	6	64	112	403	10
	B ..	156	..	530	191	28	749	905	669	1,687	41	110	710	1,797	195
	C ..	..	58	2	..	..	60	..	..	..	..	..	..	..	..
Total	..	201	58	591	206	31	886	1,027	775	2,026	47	174	822	2,200	205
West Vellore.	A ..	125 (a)+2	..	86	24	1	111	238	154	441	19 (d) 30	54 56	203	551	35
	B ..	30	2	264	65	5	336	366	274	646	18	48	292	694	74
	C ..	..	51	11	..	..	62	..	..	..	..	..	..	..	..
Total	..	157	53	361	89	6	509	604	428	1,087	67	158	495	1,245	109
South Arcot.	A ..	199	1	448	130	9	588	787	698	1,715	28	64	726	1,779	61
	B ..	380 (b)+19	..	1,081	189	12	1,282	1,681	1,136	1,608	..	..	1,136	1,608	545
	C ..	..	5	29	2	7	43	..	..	..	..	..	..	..	..
Total	..	598	6	1,558	321	28	1,913	2,468	1,834	3,323	28	64	1,862	3,387	606
North Salem.	A ..	247	..	299	31	9	339	586	532	1,518	8	20	540	1,538	46
	B ..	143 (b)+12	..	881	173	22	1,076	1,231	641	1,243	119	266	760	1,509	471
	C .		67	..	..	..	67	..	..	..	..	..	..	..	..
Total	..	402	67	1,180	204	31	1,482	1,817	1,173	2,761	127	286	1,300	3,047	517
South Salem.	A ..	197	..	116	24	6	146	343	128	467	4 (d) 1	15 5	133	487	210
	B ..	270	..	563	114	17	694	964	549	811	45	93	594	904	370
	C ..	..	50	6	2	..	58	..	..	..	..	..	..	..	..
Total	..	467	50	685	140	23	898	1,307	677	1,278	50	113	727	1,391	580
Trichinopoly.	A ..	231	..	337	106	18	461	692	409	1,272	21	52	430	1,324	262
	B ..	312 (c) −16	..	1,008	252	72	1,332	1,628	1,013	1,713	18	38	1,031	1,751	597
	C ..	..	10	27	34	3	74	..	..	..	..	..	..	..	..
Total	..	527	10	1,372	392	93	1,867	2,320	1,422	2,985	39	90	1,461	3,075	859
Madura ..	A ..	548	2	586	116	31	735	1,283	826	3,027	36	108	868	3,227	415
	B ..	160	1	480	170	17	668	828	444	887	(d) 6 102	22 328	546	1,215	282
	C ..	..	107	11	..	..	118	..	..	..		..	..	..	
Total	..	708	110	1,077	286	48	1,521	2,111	1,270	3,984	144	458	1,414	4,442	697
Tinnevelly.	A ..	48 (b)+2	..	144	57	13	214	264	228	564	7	12	235	576	29
	B ..	45 (b)+48	2	479	213	62	756	849	648	1,218	14	26	662	1,244	187
	C	..	..	3	..	..	3	..	..	..	..	..	..	..	..
Total	..	143	2	626	270	75	973	1,113	876	1,782	21	38	897	1,820	216
Total, Southern Circle.	A ..	1,770	4	2,183	571	93	2,851	4,621	3,334	10,108	171	484	3,505	10,592	1,116
	B ..	1,832	7	5,939	1,661	242	7,849	9,681	6,372	11,578	397	997	6,769	12,575	2,912
	C ..	..	456	89	102	10	657	..	..	..	..	..	..	..	..
Grand total	..	3,602	467	8,211	2,334	345	11,357	14,302	9,706	21,686	568	1,481	10,274	23,167	4,028

A = Cases taken to court. B = Cases compounded. C = Cases undetected.

The difference between column 2 and the closing balance of last year is due to transfer of cases from B to A.

(a) Omitted to be included in the last year's return.

(b) Offences in unreserved lands omitted to be included in the last year's return by District Forest Officer.

(c) Transferred to South Salem last year.

(d) Withdrawn by the District Forest Officer.

Register of breaches of Forest Rules during 1919–20—*cont.*

District.		Cases pending from 1918–19.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of the year.
			Injury to forest by fire.	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
									Cases.	Persons	Cases.	Persons.	Cases.	Persons.	
Western Circle.															
Mangalore, North.	A ..	* 55	..	57	10	13	80	135	92	134	22	61	144	195	21
	B ..	* 85	5	315	88	29	437	522	419	675	49	148	468	823	54
	C ..	..	62	..	..	..	62	..	..	..	..	..	..	..	..
	Total ..	140	67	372	98	42	579	657	511	809	71	209	582	1,018	75
Mangalore, South.	A ..	16	10	60	25	5	100	116	82	149	5	25	87	174	29
	B ..	77	21	275	54	76	426	503	327	474	65	116	392	590	111
	C ..	..	25	..	..	..	25	..	..	..	..	..	..	..	..
	Total ..	93	56	335	79	81	551	619	409	623	70	141	479	764	140
Malabar, North.	A ..	2	1	1	..	1	3	5	2	2	2	3	4	5	1
	B ..	1	1	12	1	11	25	26	25	33	1	5	26	38	..
	C ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	3	2	13	1	12	28	31	27	35	3	8	30	43	1
Malabar, South.	A ..	* 43	..	2	7	7	16	59	49	65	1	2	50	67	9
	B ..	* 42	..	7	30	20	57	99	76	197	5	12	81	209	18
	C ..	..	..	..	..	..	2	..	..	..	..	..	..	..	..
	Total ..	85	.	9	37	27	75	158	125	262	6	14	131	276	27
The Nilgiris.	A ..	* 9	2	11	12	12	37	46	36	106	2	13	38	119	8
	B ..	* 25	4	78	50	23	155	180	120	315	15	45	135	360	45
	C ..	..	19	..	..	..	19	..	..	..	..	..	..	..	..
	Total ..	34	25	89	62	35	211	226	156	421	17	58	173	479	53
Kollegal.	A ..	9	1	48	31	3	83	92	82	290	10	24	92	314	..
	B ..	† 47	1	139	82	21	243	290	182	453	29	95	211	548	79
	C ..	..	49	..	..	..	49	..	..	..	..	..	..	..	..
	Total ..	56	51	187	113	24	375	382	264	743	39	119	308	862	79
Coimbatore, North.	A ..	* 50	..	25	56	2	83	133	113	584	2	5	115	589	18
	B ..	* 27	1	271	172	4	448	475	380	895	39	94	419	989	56
	C ..	..	57	..	31	..	88	..	..	..	..	..	..	..	..
	Total ..	77	58	296	259	6	619	608	493	1,479	41	99	534	1,578	74
Coimbatore, Central.	A ..	40	..	151	40	7	198	238	193	396	17	65	210	461	28
	B ..	39	..	324	133	38	495	534	422	937	50	131	472	1,068	62
	C ..	..	15	3	..	..	18	..	..	..	..	..	..	..	..
	Total ..	79	15	478	173	45	711	772	615	1,333	67	196	682	1,529	90
Coimbatore, South.	A ..	* 15	..	27	3	23	53	68	48	130	3	11	51	141	17
	B ..	* 40	1	152	34	59	246	286	210	495	26	70	236	565	‡ 50
	C ..	..	7	2	..	..	9	..	..	..	..	..	..	..	..
	Total ..	55	8	181	37	82	308	354	258	625	29	81	287	706	67
Grand, Total.	A ..	239	14	382	184	73	653	892	697	1,856	64	209	761	2,065	131
	B ..	383	34	1,573	644	281	2,532	2,915	2,161	4,474	279	716	2,440	5,190	475
	C ..	..	236	5	31	..	272	..	..	..	..	..	..	..	..
	Total ..	622	284	1,960	859	354	3,457	3,807	2,858	6,330	343	925	3,201	7,255	606
Grand total Presidency.	A ..	3,497	34	4,187	1,829	336	6,386	9,883	6,962	21,337	592	2,198	7,554	23,535	2,329
	B ..	3,960	47	12,941	5,528	908	19,424	23,384	16577	35,949	1,492	4,251	18,069	40,200	5,315
	C ..	..	1,214	342	164	17	1,727	..	..	..	..	..	..	..	..
	Total ..	7,457	1 295	17,470	7,511	1,261	27,537	33,267	23,539	57,286	2,084	6,449	25,623	63,735	7,644

A = Cases taken into Court. B = Cases compounded. C = Cases undetected.

* The variations between the closing balances of 1918–19 and these figures are due to transfers between heads A and B.

† Revised figure furnished by the District Forest Officer.

‡ Excludes 2 cases in which District Forest Officer has not passed orders yet.

Annual Form No. 72.

Forest Department, Madras Presidency.

Area of forest tracts protected from fire during 1919–20.

District.	Forest tracts.	Area protected during the previous year.	During the year under report.			Cost during the year under report.
			Area attempted to be protected.	Fires.	Actually protected.	
	Northern Circle.	Acs.	Acs.	Acs.	Acs.	Rs.
Ganjam ..	Special protection ..	83,491	46,158	386	45,772	3,638
	General do. ..	177,192	220,416	707	219,709	2,338
	Total, Ganjam ..	260,683	266,574	1,093	265,481	5,976
Vizagapatam.	Special protection ..	53,308	55,921	1,088	54,833	1,511
	General do. ..	123,828	112,936	55	112,881	545
	Total, Vizagapatam ..	177,136	168,857	1,143	167,714	2,056
Gōdāvari Upper.	Special protection ..	429,897	533,837	17,178	516,659	6,294
	General do. ..	..	..	..	..	..
	Total, Gōdāvari, Upper..	429,897	533,837	17,178	516,659	6,294
Gōdāvari, Lower.	Special protection ..	148,183	152,636	1,956	150,680	4,363
	General do. ..	82,457	82,568	858	81,710	1,225
	Total, Gōdāvari, Lower..	230,640	235,204	2,814	232,390	5,588
Kistna ..	Special protection ..	12,644	13,402	1,692	11,710	1,075
	General do. ..	35,015	32,811	2,084	30,727	299
	Total, Kistna ..	47,659	46,213	3,776	42,437	1,374
Kurnool, East.	Special protection ..	189,406	96,018	13,730	82,288	3,620
	Early burning	..	102,400	428	101,972	1,701
	General protection ..	410,780	422,365	24,877	397,488	430
	Total, Kurnool, East ..	600,186	620,783	39,035	581,748	5,751
Kurnool, South.	Special protection ..	273,456	355,684	169,842	185,842	10,927
	General do. ..	126,392	130,980	10,202	120,778	..
	Total, Kurnool, South ..	399,848	486,664	180,044	306,620	10,927
Kurnool, West.	Special protection ..	71,788	36,913	1,490	35,423	1,442
	Early burning	..	75,109	..	75,109	708
	General protection ..	376,550	9,868	700	9,168	..
	Total, Kurnool, West ..	448,338	121,890	2,190	119,700	2,150
Total ..	Special protection ..	1,262,173	1,290,569	207,362	1,083,207	32,870
	Early burning	..	177,509	428	177,081	2,409
	General protection ..	1,332,214	1,011,944	39,483	972,461	4,837
	Total ..	2,594,387	2,480,022	247,273	2,232,749	40,116
	Central Circle.					
Bellary ..	Special protection ..	18,562	28,165	2,695	25,470	1,137
	General do. ..	27,002	58,662	15,626	43,036	328
	Total ..	45,564	86,827	18,321	68,506	1,465
Anantapur ..	Special protection ..	362,279	142,539	13,097	129,442	1,307
	General do. ..	110,171	335,231	26,210	309,021	..
	Total ..	472,450	477,770	39,307	438,463	1,307
Guntūr ..	Special protection ..	..	..	..	..	..
	General do. ..	..	..	..	..	..
	Total ..	..	..	..	..	..
Cuddapah, North.	Special protection ..	248,547	275,000	104,766	170,234	1,674
	General do. ..	52,649	55,090	6,382	48,708	..
	Total ..	301,196	330,090	111,148	218,942	1,674
Cuddapah, South.	Special protection ..	208,488	218,072	47,453	170,619	4,694
	General do. ..	41,534	45,231	6,484	38,747	..
	Total ..	250,022	263,303	53,937	209,366	4,694
Cuddapah, West.	Special protection ..	233,449	238,676	40,567	198,109	3,942
	General do. ..	107,816	116,068	12,689	103,379	880
	Total ..	341,265	354,744	53,256	301,488	4,822

Area of forest tracts protected from fire during 1919-20—*cont.*

District.	Forest tracts.	Area protected during the previous year.	During the year under report.			Cost during the year under report.
			Area attempted to be protected.	Fires.	Actually protected.	
	Central Circle—cont.	ACS.	ACS.	ACS.	ACS.	RS.
Nellore ..	Special protection ..	148,041	149,184	2,887	146,297	1,881
	General do. ..	..	..	..	..	..
	Total ..	148,041	149,184	2,887	146,297	1,881
Chingleput..	Special protection ..	25,433	25,523	90	25,433	1,908
	General do. ..	106,695	106,695	5	106,690	..
	Total ..	132,128	132,218	95	132,123	1,908
Chittoor ..	Special protection ..	159,451	108,026	2,634	105,392	1,755
	General do. ..	367,152	420,288	10,625	409,663	619
	Total ..	526,603	528,314	13,259	515,055	2,374
Total ..	Special protection ..	1,404,250	1,185,185	214,189	970,996	23,298
	General do. ..	813,019	1,137,265	78,021	1,059,244	1,827
	Grand total ..	2,217,269	2,322,450	292,210	2,030,240	25,125
	Southern Circle.					
Vellore, North.	Special protection ..	39,268	40,758	2,468	38,290	803
	General do. ..	252,509	252,431	8,983	243,448	..
	Total ..	291,777	293,189	11,451	281,738	803
Vellore, South.	Special protection ..	100,446	100,998	501	100,497	800
	General do. ..	149,233	151,227	2,540	148,687	..
	Total ..	249,679	252,225	3,041	249,184	800
Vellore, West.	Special protection ..	93,344	101,535	971	100,564	525
	General do. ..	107,772	108,418	2,488	105,930	..
	Total ..	201,116	209,953	3,459	206,494	525
South Arcot.	Special protection ..	13,536	13,541	5	13,536	246
	General do. ..	166,327	162,359	2	162,357	..
	Total ..	179,863	175,900	7	175,893	246
Salem, North.	Special protection ..	84,167	105,273	2,111	103,162	1,348
	General do. ..	449,359	430,754	1,762	428,992	(a)+ 495 ..
	Total ..	533,526	536,027	3,873	532,154	1,843
Salem, South.	Special protection ..	273,746	286,626	1,153	285,473	2,293
	General do. ..	78,011	70,195	979	69,216	..
	Total ..	351,757	356,821	2,132	354,689	2,293
Trichinopoly.	Special protection ..	96,654	97,506	703	96,803	618
	General do. ..	101,034	100,814	20	100,794	..
	Total ..	197,688	198,320	723	197,597	618
Madura ..	Special protection ..	211,038	169,069	6,201	162,868	4,618
	General do. ..	204,741	250,449	3,453	246,996	(a) — 26 ..
	Total ..	415,779	419,518	9,654	409,864	4,592
Tinnevelly.	Special protection ..	35,614	35,688	1,709	33,979	4,900
	General do. ..	193,813	206,712	2,545	204,167	..
	Total ..	229,427	242,400	4,254	238,146	4,900
Total ..	Special protection ..	947,813	950,994	15,822	935,172	16,620
	General do. ..	1,702,799	1,733,359	22,772	1,710,587	..
Grand total ..	Special and General protection.	2,650,612	2,684,353	38,594	2,645,759	16,620

(a) Added or subtracted to tally with Accountant-General's audited figure.

Area of forest tracts protected from fire during 1919–20—*cont.*

District.	Forest tracts.	Area protected during the previous year.	During the year under report.			Cost during the year under report.
			Area attempted to be protected.	Fires.	Actually protected.	
	Western Circle.	ACS.	ACS.	ACS.	ACS.	RS.
Mangalore, North.	Special protection ..	31,695	33,496	285	33,211	751 * 383
	General do. ..	198,953	198,563	955	197,608	447 † — 5
	Total ..	230,648	232,059	1,240	230,819	1,576
Mangalore, South.	Special protection ..	103,938	107,342	2,792	104,550	1,400 * 104
	General do. ..	170,523	171,458	1,956	169,502	838
	Total ..	274,461	278,800	4,748	274,052	2,342
Malabar, North.	Special protection ..	138,622	139,596	30,050	109,546	5,834
	General do. ..	..	..	..	..	..
	Total ..	138,622	139,596	30,050	109,546	5,834
Malabar, South.	Special protection ..	104,027	105,076	21	105,055	3,753
	General do. ..	..	..	..	..	..
	Total ..	104,027	105,076	21	105,055	3,753
The Nilgiris.	Special protection ..	74,154	76,657	31,543	45,114	5,274
	General do. ..	..	..	..	..	..
	Total ..	74,154	76,657	31,543	45,114	5,274
Kollegal ..	Special protection ..	36,394	38,380	..	38,380	3,013 † — 11
	General do. ..	418,597	425,613	18,135	407,478	..
	Total ..	454,991	463,993	18,135	445,858	3,002
Coimbatore, North.	Special protection ..	7,873	10,461	190	10,271	1,384
	General do. ..	559,108	576,370	13,952	562,418	2,238
	Total ..	566,981	586,831	14,142	572,689	3,572
Coimbatore, Central.	Special protection ..	114,203	102,103	942	101,161	3,512
	General do. ..	116,527	129,666	426	129,240	1,155
	Total ..	230,730	231,769	1,368	230,401	4,667
Coimbatore, South.	Special protection ..	47,349	47,350	117	47,235	3,073
	General do. ..	179,909	200,993	13,206	187,787	..
	Total ..	227,258	248,343	13,323	235,020	3,073
	Total, Special protection Western Circle.	658,255	660,461	65,940	594,521	28,420
	Total, General protection, Western Circle.	1,643,617	1,702,663	48,630	1,654,033	4,673
	Grand total, Western Circle.	2,301,872	2,363,124	114,570	2,248,554	33,093
	Grand total, presidency special protection.	4,272,491	4,087,209	503,313	3,583,896	101,208
	Total early burning (Northern Circle).	..	177,509	428	177,081	2,409
	Grand total, presidency general protection.	5,491,649	5,585,231	188,906	5,396,325	11,337
	Grand total ..	9,764,140	9,849,949	692,647	9,157,302	114,954

* Cost of fire-tracing Mysore-South Kanara boundary.
† Cash recovery of service payments.

ANNUAL FORM No. 75.

Forest Department, Madras Presidency.

Area closed and open to grazing during 1919–20.

District.	Closed to all animals.		Open to grazing			
			Of all animals, except goats.		Of all animals except browsers (sheep and goats).	
	Whole year.	Part of year.	Whole year.	Part of year.	Whole year.	Part of year.
NORTHERN CIRCLE.						
Reserved forests.						
	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Ganjam	85	..	538	..	..	..
Vizagapatam	14	..	285	..	9	..
Godavari, Upper	..	..	531	..	..	..
Do. Lower	23	..	376	..	..	..
Kistna	62	8	194	..	..	..
Kurnool, East	..	312	658	..	..	..
Do. South	556	..	204	..	..	..
Do. West	188	..	669	..	..	..
Total ..	928	320	3,455	..	9	..
Reserved lands.						
Ganjam	..	..	2	..	..	..
Vizagapatam	..	..	* 2	..	..	..
Godavari, Upper	..	..	303	..	..	..
Do. Lower	..	..	92	..	..	..
Kistna	..	..	1	..	..	..
Kurnool, East	..	..	..	..	..	..
Do. South	..	..	..	..	..	..
Do. West	..	..	..	..	..	..
Total ..	..	..	400	..	..	..
CENTRAL CIRCLE.						
Reserved forests.						
Bellary	87	..	..	485	..	..
Anantapur	32	..	585	130	..	..
Guntur	111	..	..	292	..	397
Cuddapah, North	72	..	523	..	..	..
Do. South	91	..	371	..	..	..
Do. West	60	..	688	..	..	..
Nellore	174	..	25	520	..	..
Chingleput	80	..	15	112	..	..
Chittoor	148	..	677	..	..	..
Total ..	855	..	2,884	1,539	..	397
Reserved lands.						
Bellary	..	..	..	3	..	..
Cuddapah, North	..	..	1	..	..	..
Do. West	4	..	..	..	..	..
Nellore	11	..	..	..	..	..
Total ..	15	..	1	3	..	..
SOUTHERN CIRCLE.						
N.B.—No goat browsing is allowed.						
Reserved forests.						
Vellore, North	102	8	348	8	..	..
Do. South	41	..	377	..	..	..
Do. West	11	..	317	..	..	..
South Arcot	93	..	152	..	..	..
Salem, North	69	..	768	..	..	..
Do. South	40 + 4(*b*)	2	512	..	..	..
Trichinopoly	51	..	259	..	..	..
Madura	79	..	581	..	..	..
Tinnevelly	300	34	88	34	1	2
Total ..	790	44	3,432	42	1	2
Reserved lands.						
Vellore, North	(*a*)	..	..	..	..	..
Do. South	1	..	..	..	..	..
Salem, North	..	..	(*a*)	..	..	..
Do. South	6	..	36	..	..	..
Tinnevelly	2	..	..	..	..	..
Total ..	9	..	36	..	..	..

* Leased forests. (*a*) Below one square mile. (*b*) Represents area leased out for cultivation.

Forest Department, Madras Presidency.

Area closed and open to grazing during 1919-20—*cont.*

District.	Closed to all animals.		Open to grazing			
			Of all animals. (except goat)		Of all animals except browsers (sheep and goats).	
	Whole year.	Part of year.	Whole year.	Part of year.	Whole year.	Part of year.
WESTERN CIRCLE.						
Reserved forests.						
	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	
Mangalore, North	8	..	354	..	..	..
Do. South	7	..	429	..	..	..
Malabar, North	57	..	..	..	206	..
Do. South	144	..	..	..	..	..
The Nilgiris	23	..	444	..	..	..
Kollegal	82	..	649	..	..	..
Coimbatore, North	38	..	879	..	..	..
Do. Central	133	2	227	..	..	..
Do. South	249	..	191	..	14	..
Total ..	741	2	3,173	..	220	..
Reserved lands.						
Malabar, South	20	..	..	..	..	..
The Nilgiris	9	..	72	..	..	..
Coimbatore, Central	..	*	..	..	..	..
Total ..	29	..	72	..	..	..
Grand Total, Presidency ..	3,367	366	13,453	1,584	220	399

* Less than one square mile.

ANNUAL

Forest Department,

Return of grazing in the

Districts.	Grazing on payments.									
	At enhanced or special rates.					At full rates.				
	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Fees received.	Buffaloes.	Cows and bullocks.	Goats and Sheep.	Other animals.	Fees received.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Northern Circle.					Rs.					Rs.
Reserved forests.										
Ganjam	..	..	..	..	..	7,032	28,879	S 144	..	8,065
Vizagapatam ..	..	(*a*) 1,585	..	..	792	933	12,166	S 1,044	..	2,729
	(*b*) 169	(*b*) 903	(*b*) S 1,434	..	490	..	..	..	..	..
Godavari, Upper..	..	..	..	..	..	..	..	..	..	..
Do. Lower ..	(*c*) 1,495	(*c*) 660	..	..	1,369	..	..	..	..	..
	(*b*) 5,695	(*b*) 3,367	..	..	3,689	..	..	S 90	..	8
	..	..	..	..	..	..	..	..	..	* 210
Kistna	(*c*) 562	(*c*) 4,437	(*c*) S 560	..	2,190	7,281	16,244	S 9,873	..	6,702
	..	(*d*) 1,896	..	..	1,896	..	..	..	..	‡ 1,265
	..	..	..	..	..	..	..	..	..	† 155
	..	..	..	..	..	..	..	..	..	* 1,258
	(*c*) 2,224	(*a*) 27,870	(*a*) S 21,570	..	20,995	..	..	..	..	I 2,145
Kurnool, East ..	..	..	..	..	..	..	..	..	..	..
	(*d*) 1,179	(*d*) 25,115	..	..	27,473	..	..	..	..	* 103
	..	..	..	..	..	..	..	..	..	* 539
Do. South ..	(*c*) 2,606	(*a*) 18,247	(*a*) S 15,411	..	14,930	..	..	..	..	* 109
	..	(*d*) 1,690	(*d*) S 400	..	1,890	..	..	..	..	..
	(*d*) 42	(*d*) 8,285	(*d*) S 28	..	8,383	..	..	..	..	* 817
Do. West ..	(*c*) 7,869	(*a*) 27,788	(*a*) S 38,891	..	29,518	..	..	..	..	* 54
	..	..	..	..	..	..	..	..	..	‡ 350
	..	..	..	..	..	..	..	..	..	..
Total ..	21,841	121,843	78,294	..	1,13,615	15,246	57,289	S 11,151	..	17,504 * 1,625 ‡ 3,760 † 155 0 1,515
Reserved lands.										
Godavari Upper ..	..	(*c*) 345	..	..	108	..	..	..	..	..
Do. Lower ..	..	..	..	..	..	..	..	..	..	* 225
Total ..	..	345	..	..	108	..	..	..	..	* 225
Unreserved lands.										
Ganjam	..	..	..	..	..	..	..	..	..	* 110
Godavari, Upper..	(*b*) 223	(*c*) 75	..	..	135	..	..	..	..	..
Do. Lower..	(*b*) 5,896	(*b*) 5,189	..	..	4,245	..	..	G 62	..	6
	..	..	..	..	..	..	..	..	..	* 2,047
Kistna	..	..	..	..	..	1,355	219	S 62	..	555
	..	..	..	..	..	..	..	..	..	* 26
Total ..	6,119	5,264	..	..	4,380	1,355	219	G 62 S 62	..	561 * 2,183
Grand total ..	27,960	127,452	S 78,294	..	118,103	16,601	57,508	G 62 S11,213	..	18,065 * 4,083 ‡ 3,760 † 155 0 1,515
Central Circle.										
Bellary	(*a*) 775	3,571	1,441	..	5,841	9,074	41,768	71,608	..	17,948
	..	..	..	..	..	..	..	..	Fodder grass.	2,301
	..	..	..	..	..	..	..	..	Panchayat fees.	7,391
Anantapur ..	(*b*) 3,075	70,554	73,052	..	56,615	..	..	..	..	..
	..	..	..	..	..	..	..	..	Fodder grass.	3,891
	..	..	..	..	..	..	..	..	Panchayat fees.	937
Guntur	(*c*) 3,508	45,010	50,266	..	57,869	..	..	..	Panchayat fees.	7,719
	(*d*) 1,838	3,077	15,940	..	3,681	..	..	..	Kancha rent.	1,439
	..	..	..	..	..	..	..	..	Fodder grass.	3,851
Cuddapah, North.	(*a*) ..	9,811	..	..	9,811	5,775	13,307	42,836	..	8,677
	..	..	..	..	..	..	..	..	Penning fees.	25
	..	..	..	..	..	..	..	..	Fodder grass.	1,295
Do. South.	(*a*) ..	3,048	..	..	3,048	498	19,623	16,681	..	5,430
	..	..	..	..	..	..	..	..	Penning fees.	16
Do. West.	(*a*) ..	10,432	..	..	10,432	3,027	33,330	66,117	..	13,583
	..	..	..	..	..	..	..	..	Panchayat fees.	1,153
Nellore	(*g*) 11	1,024	127	..	1,106	..	..	..	Panchayat fees	1,269
	(*h*) 2	..	..	..	..	..	..	..	Kancha rent.	77,280
Chingleput ..	..	..	..	..	..	..	..	..	Panchayat fees.	895
	..	..	..	..	..	..	..	..	Kancha rent.	37,962
Chittoor ..	(*e*) ..	1,419	620	..	1,297	2,838	88,567	48,036	1	22,174
	..	..	..	..	..	..	..	..	Fodder grass.	867
	..	..	..	..	..	..	..	..	Panchayat fees.	25
Total ..	9,209	147,946	141,446	..	149,700	21,212	196,595	245,278	1	216,128

Notes for N.O.— G = Goats. S = Sheep. * Sale-proceeds of fodder grass.

† Sale-proceeds of mangrove leaves. ‡ Revenue from forests handed over to panchayat management.

§ Amount of difference collected between the original and enhanced rates.

(1) The full rates are 6 annas per buffalo, 3 annas per cow or bullock and 1 anna 6 pies per sheep or goat.

(2) The enhanced or special rates are—(*a*) 8 annas per cow or bullock and 4 annas per sheep
(*b*) 8 annas per buffalo, 4 annas per cow or bullock and 2 annas per sheep.
(*c*) 12 annas per buffalo, 6 annas per cow or bullock and 3 annas per sheep.
(*d*) Rs. 2 per buffalo, Re.1 per cow or bullock and 8 annas per sheep.

(3) The privileged rates are— (*e*) 5 annas per cow or bullock.
(*f*) 4 annas per buffalo, 2 annas per cow or bullock and 1 anna per sheep.
(*g*) 2 annas per buffalo, 1 anna per cow or bullock.
(*h*) 1 anna per buffalo.

(4) (*i*) The difference between these and the audited figures is due to the exclusion of Rs. 125 which should be credited to II-e.

FORM No. 74.

Madras Presidency.

State forests during 1919-20.

Number of animals.						Grazing free. Number of animals.										Grand total of value at full rates.
At privileged rates.						By right under settlement.					During pleasure of Government or otherwise than under settlement.					
Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Fees received.		Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Value of fees at full rates.	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Value of fees at full rates.	Total value of fees at full rates.	
				Actual.	Value at full rates.												
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
				Rs.	Rs.					Rs.					Rs.	Rs.	Rs.
..	..	..	..	..	..	149	231	..	..	99	541	3,205	S 133	..	816	816	8,980
..	..	..	..	..	..	..	..	..	..	..	..	5,007	..	..	939	939	4,950
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
(*f*) 3,553	(*f*) 18,215	(*f*) S 5,321	..	3,498	5,247	..	..	..	..	..	4,289	39,278	S 245	..	8,996	8,996	14,243
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(*f*) 703	(*f*) 8455	..	..	1,233	4,691	..	..	..	..	..	992	9,831	..	..	2,215	2,215	11,972
(*h*) 655	(*g*) 13,848	..	..	906		..	..	..	..	..	..	..	..	..	..	..	* 210
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10,788
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	‡ 1,265
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	† 155
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	* 1,258
..	..	..	..	..	..	647	716	S 102	..	875	..	..	..	..	..	..	49,343
..	..	..	..	..	..	..	..	G5 211	..	..	..	..	..	..	..	..	‡ 2,145
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	* 103
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	589
..	..	..	..	..	..	12	11	57	..	12	..	..	..	..	..	..	16,882
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0 109
..	..	..	..	..	..	274	559	..	507	303	..	..	..	..	..	..	(*i*) 38,204
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0 817
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	* 54
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	‡ 350
4,911	40,518	S 5,321	..	5,637	9,938	1,082	1517	S 102 G5,268	507	1,289	5,822	57,321	S 378	..	12,966	12,966	1,55,312 * 1,625 ‡ 3,760 † 155 § 1,515
(*f*) 3,561	(*f*) 22,454	(*f*) S 151	..	3,706	5,560	..	..	..	..	..	..	..	..	..	..	..	5,668
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	* 225
3,561	22,454	S 151	..	3,706	5,560	..	..	..	..	..	..	..	..	..	..	..	5,668 * 225
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	* 110
(*g*) 25	(*g*) 446	(*e*) S 1,116	..	101	198	..	..	..	..	..	..	..	..	..	..	..	333
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4,251
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	* 2,047
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	555
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	* 26
25	446	S 1,116	..	101	198	..	..	..	..	..	..	..	..	..	..	..	5,139 * 2,183
8,497	63,418	S 6,588	..	9,444	15,696	1,082	1517	S 102 G5,268	507	1,289	5,822	57,321	S 378	..	12,966	12,966	1,66,119 * 4,033 ‡ 3,760 † 155 § 1,515
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	33,481
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	61,443
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	74,559
..	(*e*) 250	..	..	16	47	..	..	..	..	..	190	45	850	..	159	159	20,014
..	..	..	..	..	..	..	679	..	..	127	..	..	..	..	..	..	8,621
..	(*f*) 260	..	..	24	49	..	..	..	..	..	..	..	..	..	..	..	25 217
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	79,655
..	..	..	..	..	..	..	..	..	..	..	..	81	..	..	15	15	38,872
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	24,363
..	510	..	..	40	96	..	679	..	..	127	190	126	850	..	174	174	8,66,225

Notes for O.O. (*a*) Rs. 2 per buffalo, Re. 1 per cow or bull and As. 8 per sheep.
(*b*) Re. 1 per buffalo, As. 8 per cow or bull and As. 4 per sheep.
(*c*) Rs. 1 8 0 per buffalo, As. 12 per bull or cow, and As. 6 per sheep.
(*d*) As. 8 per buffalo, As. 4 per bull or cow and As. 2 per sheep.
(*e*) Anna 1 per cow or bull. (*f*) As. 1 6 per cow or bull.
(*g*) Rs. 1-8 0 per buffalo, Re. 1 per cow or bull and As. 8 per sheep.
(*h*) Re. 1 per buffalo.

Return of grazing in the

District.	Grazing on payment: At enhanced or special rates.					At full rates.				
	Buffaloes.	Cows and bullocks.	Sheep.	Other animals.	Fees received.	Buffaloes.	Cows and bullocks.	Sheep.	Other animals.	Fees received.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SOUTHERN CIRCLE.					Rs.					Rs.
Vellore, North	(a) 748	(a) 35,860	23,348	..	24,515	40	499	20	..	110 (j) 3,735 (l) − 3
Do. South	.. (a) 188 (c) 18	(b) 3,545 (a) 18,055 (c) 1,572	.. (a) 2,354 (c) 2,446	.. .. ..	3,545 9,804 1,062	3,632	30,448	12,442	..	8,237 (j) 1,550 (l) + 9
Do. West	(a) 43	(b) 7,944 (a) 19,385 (e) 750 (g) 961	.. (a) 662 (e) 511 ..	.. ..	7,944 9,901 377 240	1,478 1,138	9,502 6,493	5,332 1,154	.. ..	2,836 .. (i) 1,570 (l) + 3
South Arcot	(d) 305	(d) 14,959	(d) 12,027	..	13,489	..	..	..	..	(m) 484 (n) 3,295 (j) 4,026
Salem, North	(e) 1,145	(e) 78,279	(e) 298 (c) 1,6384 ..	.. .. ..	40,073 3,072 (l) + 2	..	..	..	..	..
Do. South	(f) 310	(f) 47,603	(f) 6,740	..	2,9021	20	1,672	..	..	321 (o) 100
Trichinopoly	(c) 48	(e) 1,142 (f) 965 ..	(e) 5,857	.. .. ..	1,562 543 ..	441	23,524	42,959	..	8,604 (j) 8,676 (p) 53
Madura	(g) 269 (h) 83	(g) 23,422 (h) 22,091	(g) 6,751 (h) 16,092	(g) 517 ..	6,663 17,163	..	..	..	..	(r) 202
Tinnevelly	(a) 140	(a) 5,581	(a)	..	3,385	150	5,581	14,895	..	2,492 (j) 575 (q) 250
Total ..	3,297.	282,114	95,288	517	172,661	6,879	77,719	76,802	..	47,129

Notes (1)—The full rates are 6 annas per buffalo ; 3 annas per cow, bullock or other animal and 1½ annas per sheep in all districts except Madura where the full rate is 4 annas per cow unit.

(2) The enhanced or special rates are ;—

(*a*) Ruppee 1 per buffalo 8 annas per cow or bullock and 4 annas per sheep.
(*b*) Rupee 1 per cow or bullock.
(*c*) Annas 12 per buffalo, 6 annas per cow or bullock and 3 annas per sheep.
(*d*) Rupees 1-4-0 per buffalo 10 annas per cow or bullock, 5 annas per sheep.
(*e*) Annas 12 per buffalo, 8 annas per cow or bullock and 4 annas per sheep.
(*f*) Rupees 1-2-0 per buffalo, 9 annas per cow or bullock and 4½ annas per sheep.
(*g*) Annas 8 per buffalo, 4 annas per cow, bullock or other animal and 2 annas per sheep.
(*h*) Rupee 1 per buffalo, 8 annas per cow or bullock and 6 annas per sheep.
(*i*) The figures in columns 2-5 represents the actual number of cattle as per cattle triennial census of 1919. The rate cannot agree with the actual collection as some of the villages which were under the forest village system refused to accept the village system subsequently.
(*j*) Collection from panchayatdars.
(*k*) Value of free removal of grass.
(*l*) Added or subtracted to tally with Accountant-General's audited figures.
(*m*) Grazing fees realised in Kodiakadu and Talanayar Reserved forest in Tanjore District.
(*n*) Lease amount of grazing in certain Reserved forests.
(*o*) Grazing assessment for the Malayalee cattle on the Chitteries as per B.P. Forest No. 142, dated 6th October 1915.
(*p*) Lease amount of pasture in unreserves.
(*q*) Lease amount for grazing in Kanulkuttiparambu reserved forest.
(*r*) The actual collection from panchayatdars is Rs. 1,174 of which Rs. 972 was wrongly credited to V (*b*) by the District Forest Officer.

State forests during 1919–20—*cont.*

Number of animals						Grazing free. Number of animals.										Grand total of value at full rates.
At privileged rates.*						By right under settlement.					During pleasure of Government or otherwise than under settlement.					
				Fees received.												
Buffaloes. (12)	Cows and bullocks. (13)	Sheep. (14)	Other animals. (15)	Actual. (16)	Value at full rates. (17)	Buffaloes. (18)	Cows and bullocks. (19)	Sheep. (20)	Other animals. (21)	Value of fees at full rates. (22)	Buffaloes. (23)	Cows and bullocks. (24)	Sheep. (25)	Other animals. (26)	Value of fees at full rates. (27)	Total value of fees at full rates. (28)	(29)
															Rs. (k)	Rs. (k)	Rs.
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,245	2,245	30,602
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	24,207
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	22,871
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21,294
..	..	..	..	..	..	..	..	..	..	..	..	150	..	..	28	28	43,175
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	29,442
..	..	..	..	..	..	..	240	..	..	45	..	..	..	..	..	..	19,487
..	..	..	..	..	..	..	..	..	..	..	357	3,071	377	17	998	998	25,326
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,702
..	..	..	..	..	..	..	240	..	..	45	357	3,221	377	17	3,271	3,271	223,106

Return of grazing in the

District.	Grazing on payment.									
	At enhanced or special rates					At full rates.				
	Buffaloes.	Cows and bullocks.	Goat and sheep.	Other animals	Fees.	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Fees received.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Western Circle.										
Reserved Forests.					Rs.					Rs.
Mangalore, North ..	..	..	..	..	.	(*b*) 2,031	(*b*) 16,827	..	..	3,917
Do. South ..	..	..	..	..	..	(*b*) 3,236	(*b*) 19,502	..	..	4,870
Malabar, North	(*c*) 2,321	4,637	..	..	4,640	..	..	..	..	..
The Nilgiris	(*c*) 123	3,452	S 130	..	1,882	(*h*) 13,226	(*b*) 20,237 (*i*) 37	S (*b*) 1,520	..	8,900 (*c*) 119
Kollegal	(*c*) 2,750	58,954	S 2,113	..	32,755	..	..	..	..	..
Coimbatore, North ..	(*c*) 5,416 (*d*) 19	74,150 342	S 24,369 S 114	..	48,583 109 (*e*) 1,491 2,533 4,405 1,863	..	..	..	..	..
Do. Central ..	(*f*) 10 (*c*) 6 (*d*) 69	1,993 7,814 6,113	S 1,040 S 1,968 S 2,403	.. .. .. (*g*) 1	(*e*) 94 (*j*) 1,929 (*k*) 1,204 (*l*) 656 10	..	..	..	..	..
Do. South ..	(*f*) 7 (*c*) 165	129 4,713	.. ..	.. ..	143 2,521 (*e*) 104 (*k*) 150	..	..	..	..	..
Total ..	10,886	162,297	32,137	1	105,072	18,493	56,603	1,520	..	17,806
Reserved Lands.										
The Nilgiris	..	620	..	..	310	(*b*) 380	(*b*) 536	..	..	243
Grand total, Presidency..	51,352	720,429	347,165	518	545,846	63,565	388,961	334,813 (*g*) 62	1	309,484

S = Sheep.

(*a*) Buffaloes, cows, etc., brought for a cattle fair at Kulgunda charged without distinction at a uniformn rate of As. 2 per head.
(*b*) As. 6 per buffalo, As. 3 per cow, bullock or other animals and As. 1–6 per sheep.
(*c*) Re. 1 per buffalo, As. 8 per cow, bullock or other animals and As. 4 per sheep.
(*d*) As. 8 per buffalo, As. 4 per cow, bullock or other animals and As. 2 per sheep.
(*e*) Sale-proceeds of fodder grass.
(*f*) Rs. 2 per buffalo, Re. 1 per cow, bullock or other animals and As. 8 per sheep.
(*g*) Elephant.
(*h*) As 6 per 100 per diem for buffaloes, bullocks and cows and As. 3 per 100 per diem for sheep.
(*i*) Calves, half rates.
(*j*) Lease of fodder grass.
(*k*) Revenue from reserves handed over to panchayat management.
(*l*) Revenue by lease of the right to graze in certain reserves.

State forests during 1919-20—*cont.*

Number of animals.						Grazing free. Number of animals.										Grand total of value at full rates.
At privileged rates.*				Fees received.		By right under settlement.					During pleasure of Government or otherwise than under settlement.					
Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals	Actual	Value at full rates.	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Value of fees at full rates	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Value of fees at full rates.	Total value of fees at full rates.	
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
				Rs.	Rs.					Rs.					Rs.	Rs.	Rs.
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,917
..	..	..	(a)15,369	1,921	(a)1,921	..	..	..	..	..	..	..	..	..	..	..	6,791
..	..	..	..	..	..	..	..	..	..	..	..	..	..	(g) 1	91	91	4,731
(h) 90	(h)5,435	8 38,905	..	194	4,683	..	..	..	..	..	2,480	..	..	..	930	930	16,514
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	32,755
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50,183
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12,694
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,918
90	5,435	38,905	15,369	2,115	6,604	..	..	..	..	..	2,480	..	..	1	1,021	1,021	1,30,503
..	..	..	..	..	..	..	..	..	..	..	263	105	..	..	108	118	671
8,587	69,363	45,493	15,369	11,599	22,396	1,082	2,436	5,370	679	1,836	9,112	8,773	1,605	18	17,540	17,540	8,96,0

Abstract of animals permitted to grazing in reserved forests and reserved and unreserved lands on payment.

Circle.	Buffaloes.	Bullocks and cows.	Sheep.	Goats.	Other animals.	Total.
Northern Circle	53,058	248,378	96,395	62	..	397.593
Central Circle	30,421	345,051	386,724	..	1	762,197
Southern Circle	10,176	359,833	172,090	..	517	542,616
Western Circle	29,849	225,491	72,562	..	15,370	343,272
Grand total ..	123,504	1,178,753	727,471	62	15,888	2,045,678

Annual Form No. 75.

Forest Department, Madras Presidency.

Area under artificial reproduction, 1919–20.

District.	Area in acres.				Expenditure during the year.		Total expenditure from commencement.		Revenue during the year.	Total revenue from date of creation of plantation.
	On 1st July 1919.	Added during the year.	Excluded during the year.	Area on 30th June 1920.	Creation.	Upkeep.	Creation.	Upkeep.		
Northern Circle.										
A.—Regular Plantations.	ACS.	ACS.	ACS.	ACS.	RS.	RS.	RS.	RS.	RS.	RS.
Vizagapatam ..	51	..	..	51	..	..	* 2	42	120	3,652
Gōdāvari, Lower ..	190	..	38	152	..	71	31,150	15,475	4,169	74,518
Kistna	36	1	3	34	58	75	1,637	7,504	33	3,569
Kurnool, East ..	130	..	..	130	..	..	38,471	26,045	..	..
Do. West ..	1,430	..	..	1,430	..	1,050	2,92,254	65,182	..	17,898
Total ..	1,837	1	41	1,797	58	1,196	3,63,514	1,14,248	4,322	99,637
B.— Taungya plantation.										
Ganjām	2	..	..	2	..	..	3	..	..	..
C.—Cultural Operations.										
Ganjām	* 87	4	..	91	..	108	..	108	..	..
Vizagapatam ..	69	..	24	45		..	240	..	..	..
Gōdāvari, Upper ..	107	2	..	109	..	..	59	..	..	..
Do. Lower ..	2,452	50	..	2,502	187		2,675	..	..	..
Kistna	1,442	233	200	1,475	113	62	7,835	2,461	..	62,704
Kurnool, East ..	258	179	..	437	345	..	10,559	3,561	..	..
Do. South ..	447	80	..	527	549	..	* 5,154	* 1,765	..	..
Do. West ..	5,005	85	..	5,090	68	660	23,029	3,142	..	..
Total ..	9,867	633	224	10,276	1,262	830	49,551	11,037	..	62,704
Grand total ..	11,706	634	265	12,075	1,320	2,026	4,13,068	1,25,285	4,322	1,62,341
Central Circle.										
A.—Regular Plantations.										
Bellary	579	..	..	579	..	307	9,423	63,086	6,316	6,574
Anantapur	..	..	..	..	..	..	..	..	..	..
Guntūr	† 1,432	..	784	648	..	..	41,392	28,134	16,205	† 96,840
Cuddapah, North ..	10	..	..	10	..	..	560	..	..	..
Do. South ..	38	..	..	38	..	184	23	687	597	3,433
Do. West ..	..	..	..	..	..	..	..	..	..	..
Nellore	3,270	..	1,540	1,730	..	258	1,56,705	17,229	43,752	2,72,366
Chingleput	..	..	..	..	..	..	..	..	..	..
Chittoor	60	1	..	61	..	609	..	1,671	..	51
Total ..	5,389	1	2,324	3,066	..	1,358	2,08,103	1,10,807	66,870	3,79,264
B.—Taungya Plantations—Nil.										
C.—Cultural Operations.										
Bellary	6,790	..		6,790		..	27,981	3,006	..	..
Anantapur	‡ 68	218	138	148	291	..	..	..	..	..
Guntūr	..	..	..	..	96	..	1,796	6	..	..
Cuddapah, North ..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	.	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	..	..	..	..	..
Nellore	700	20	193	527	45	..	2,767	..	..	..
Chingleput	450	30	480	..	131	..	354	..	..	.
Chittoor	2,605	919	40	3,484	652	443	1,216	815	..	..
Total ..	10,613	1,187	851	10,949	1,215	443	34,114	3,827	..	..
Grand total ..	16,002	1,188	3,175	14,015	1,215	1,801	242,217	114,634	66,870	879,264

* Revised figures furnished by District Forest Officers.

† The difference noticed between the closing balance of last year and the current year's opening balance is due to correct areas being noted now instead of approximate areas given in previous years.

‡ The deficit of 50 acres in the opening balance is due to deducting 16 acres in column 5 of last year's return instead of 66 acres the correct area and the difference is now deducted.

Area under artificial reproduction, 1919-20—*cont.*

District.	Area in acres.				Expenditure during the year.		Total expenditure from commencement.		Revenue during the year.	Total revenue from date of creation of plantation.
	On 1st July 1919	Added during the year.	Excluded during the year.	Area on 30th June 1920.	Creation.	Upkeep.	Creation.	Upkeep.		
	ACS.	ACS.	ACS.	ACS.	RS.	RS.	RS.	RS.	RS.	RS.
SOUTHERN CIRCLE.										
A.—Regular Plantations.										
Vellore, North ..	254	56	..	310	1,629	2,667	23,445	1,39,290	2,818	90,815
Do. South ..	51	21	..	72	574	159	2,539	568	1,744	4,854
Madura	1,329	..	..	1,329	1,697	351	62,601	8,436	1,240	9,312
Tinnevelly ..	5,348	10	..	5,358	..	753	7,893	2,802	4,032	19,389
Total ..	6,982	87	..	7,069	3,900	3,930	96,478	1,51,096	9,834	1,24,370
B.—Taungya Plantations.										
South Arcot ..	4	2	..	6	..	..	50	..	..	..
Tinnevelly ..	23	..	..	23	..	6	47	138	..	..
Total ..	27	2	..	29	..	6	97	138	..	..
C.—Cultural Operations.										
Vellore, North ..	1,406	208	77	1,537	293	..	* 939	154	..	579
Do. South ..	14,593	5,332	..	19,925	129	..	1,141	..	..	..
Do. West ..	991	..	..	991	..	..	125	..	..	..
South Arcot ..	7,137	2,523	..	9,660	37	..	617	2,779	..	..
Salem, North ..	143	..	..	143	..	..	9,064	..	..	..
Do. South ..	3,158	1,649	38	4,769	412	768	* 3,060	* 925	..	..
Tinnevelly ..	4,336	95	50	4,381	94	130	† 5,647	† 6,427	50	* 105
Total ..	31,764	9,807	165	41,406	965	898	20,593	10,285	50	684
Grand total ..	38,773	9,896	165	48,504	4,865	4,834	1,17,168	1,61,519	9,884	1,25,054
WESTERN CIRCLE.										
A.—Regular Plantations.										
Mangalore, South ..	52	..	..	52	..	..	10,357	..	..	516
Malabar, North ..	379	..	..	379	266	341	15,538	20,603	6,650	10,824
Do. South ..	6,580 (*a*) + 64	154	..	6,798	11,749	4,544	5,64,443	5,66,986	6,50,438	35,68,291
The Nilgiris ..	1,743	..	..	1,743	..	612	6,462	3,14,211 (*b*) — 59	53,700	8,27,330
Coimbatore, South	134 (*c*) + 25	19	..	178	483	398	10,430 (*c*) + 643		5,030	349 661
Total ..	8,977	173	..	9,150	12,498	5,895	6,07,873	9,06,771	7,11,137	44,07,622
B.—Taungya Plantations.										
Mangalore, South ..	635	..	..	50	1	..	1	..	..	..
Malabar, North ..	..	50	..	635	..	58	..	10,886	..	..
The Nilgiris ..	32	..	..	32	..	352	504	4,171	..	..
Coimbatore, Central.	..	54	..	54	..	..	..	..	..	..
Total ..	667	104	..	771	1	410	505	15,057	..	..
C.—Cultural Operations.										
Mangalore, North ..	224	362	..	586	317	..	414	..	..	..
Do. South ..	..	640	..	640	1,540	..	1,540	..	..	..
Malabar, North ..	4,590	..	..	4,590	..	43	4,655	8,524	..	..
The Nilgiris ..	(*a*) 10	35	..	45	131	..	131 (*b*) + 59	..	..	..
Kollegal	(*c*) 27	325	..	352	302	40	817	196	..	..
Coimbatore, North ..	484	354	10	828	1,419	637	2,243	774	..	..
Do. Central..	1,271	93	965	399	1,815	478	(*d*) 3,528	1,186	..	..
Do. South ..	1,251 (*c*) — 25	5	..	1,231	159	47	3,791 (*c*) — 643	1,927	..	..
Total ..	7,832	1,814	975	8,671	5,683	1,245	16,535	12,601	..	..
Grand total ..	17,476	2,091	975	18,592	18,182	7,550	6,24,913	9,34,429	7,11,137	44,07,622
Total Regular plantation.	23,185	262	2,365	21,082	16,456	12,379	12,75,968	12,82,922	7,92,163	50,10,983
Taungya ..	696	106	..	802	1	416	605	15,195	..	..
Cultural operations..	60,076	13,441	2,215	71,302	9,125	3,416	1,20,793	37,750	50	63,388
Grand total ..	83,957	13,809	4,580	93,186	25,582	16,211	13,97,366	13,35,867	7,92,213	5,074,281

* Correct figures now furnished by the District Forest Officer.
† Excludes amount spent on the area in Kottamadakki, disafforested.

(*a*) Omitted to be shown in the last year's return by the District Forest Officer.
(*b*) Relates to expenditure on "C. Cultural operations" and hence transferred to that head.
(*c*) Rs. 236 spent in dibbling seeds etc., areas not furnished.
(*d*) Excludes Rs. 1,840, amounts relating to areas abandoned.
(*e*) Transferred from class 'C' to 'A'.

ANNUAL

Forest Department,

Outturn (in thousands of cubic feet solid) of timber and fuel

Division.	Timber in the rough logs.					Timber in the rough poles.					Sawn or square timber.				
	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
															NORTHERN
					(*In thousands of cubic feet.*)										*I. Reserved*
Ganjam	49	139	6	6	200	46	56	..	31	133	..	5	..	..	5
Vizagapatam	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Gōdāvari, Upper ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. Lower ..	1	36	..	..	37	1	..	..	..	1	..	..	..	..	..
Kistna	..	3	..	..	3	..	4	..	..	4	..	..	..	..	..
Kurnool, East	2	..	..	..	2	3	..	1	..	4	4	..	..	..	4
Do. South	..	3	1	..	4	..	1	1	..	2	1	..	..	..	1
Do. West	6	..	..	..	6	8	2	2	1	13	13	..	7	..	20
Total, Reserved forests.	59	181	7	6	253	58	63	4	32	157	18	5	7	..	30
															II. Leased
															III. Reserved
															IV. Unreserved
Ganjam	5	57	4	1	67	1	6	..	8	15	..	..	..	..	..
Vizagapatam	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gōdāvari, Upper ..	48	1	..	..	49	..	7	..	..	7	..	..	..	..	..
Do. Lower ..	1	185	13	..	199	..	..	..	..	..	..	2	..	..	2
Kistna	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kurnool, East	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	7	..	..	7	..	..	..	..	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	..	47	..	..	47	..	..	..	..	..
Total ..	54	250	17	1	322	1	60	..	8	69	..	2	..	..	2
Grand total ..	113	431	24	7	575	59	123	4	40	226	18	7	7	..	32
															CENTRAL
															I. Reserved
Bellary	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Anantapur	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..
Guntur	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Cuddapah, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	1	8	..	..	9	..	..	..	..	..
Nellore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chingleput	..	2	..	..	2	..	..	..	..	..	..	..	..	..	..
Chittoor	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total, Reserved forests.	.	3	..	..	3	1	8	..	..	9	1	..	..	..	1
															II. Leased
															III. Reserved
Bellary				..	..	..	..	..	..	..	..	..	..	..	..

Note for the Northern Circle.

REMARKS.—The figures are actuals except in the following cases :—

(1) *Ganjām*—Reserved forests—Column 3.—This includes an estimated quantity of 1,020 cubic feet arrived at by conversion at 15 cubic feet per tree removed.

Unreserved lands—Column 3.—This includes an estimated quantity of 21,112 cubic feet; of which, 2,542 cubic feet were arrived at by conversion of value at 20 cubic feet per rupee and 18,570 cubic feet at 15 cubic feet per tree removed.

(2) *Gōdāvari, Lower*—Unreserved lands—Column 23.—This includes 92,000 cubic feet of timber obtained by conversion of sale amount into outturn at one cubic foot for one anna.

(3) *Kistna*—Unreserved lands—Column 23.—Estimate calculated at one cubic foot per anna on the value realized.

Column 24.—Estimate calculated at one cubic foot per two annas on the value of palmyra trees.

FORM No. 76.

Madras Presidency.

during the year 1919–20 and agency of exploitation.

Miscellaneous.					Total timber.					Fuel.					Total outturn.
Government. (17)	Purchasers. (18)	Free-grantees. (19)	Right-holders. (20)	Total. (21)	Government. (22)	Purchasers. (23)	Free-grantees. (24)	Right-holders. (25)	Total. (26)	Government. (27)	Purchasers. (28)	Free-grantees. (29)	Right-holders. (30)	Total. (31)	(32)
CIRCLE.															
Forests.							(*In thousands of cubic feet.*)								
..	..	..	..	..	95	200	6	37	338	32	309	7	194	542	880
2	3	..	..	5	3	3	..	..	6	5	120	..	..	125	131
1	..	..	..	1	1	..	..	..	1	..	..	..	..	..	1
..	..	..	..	..	2	36	..	..	38	13	1,567	..	..	1,580	1,618
..	11	..	..	11	..	18	..	..	18	3	1,144	..	..	1,147	1,165
..	..	..	..	..	9	..	1	..	10	55	1	..	..	56	66
..	7	..	..	7	1	11	2	..	14	..	77	..	..	77	91
..	..	..	..	..	27	2	9	1	39	620	7	..	154	781	820
3	21	..	..	24	138	270	18	38	464	728	3,225	7	348	4,308	4,772
Forests—Nil.															
Lands—Nil.															
Lands.															
..	..	..	..	..	6	63	4	9	82	5	120	..	6	131	213
..	34	..	..	34	..	34	..	..	34	..	18	..	..	18	52
23	16	..	1	40	71	24	..	1	96	46	84	..	..	130	226
..	..	..	..	..	1	187	13	..	201	..	102	..	..	102	303
..	21	7	..	28	..	21	7	..	28	..	44	..	..	44	72
..	12	..	..	12	..	12	..	..	12	..	4	..	..	4	16
..	..	..	..	..	..	7	..	..	7	..	43	..	..	43	50
..	..	..	..	..	..	47	..	..	47	..	67	..	..	67	114
23	83	7	1	114	78	395	24	10	507	51	482	..	6	539	1,046
26	104	7	1	138	216	665	42	48	971	779	3,707	7	354	4,847	5,818
CIRCLE.															
Forests.															
..	..	..	..	..	..	..	..	..	..	6	385	..	..	391	391
..	..	..	..	..	..	1	..	..	1	1	18	..	..	19	20
..	42	..	..	42	1	42	..	..	43	2	526	..	..	528	571
1	23	..	..	24	1	23	..	..	24	2	537	..	..	539	563
6	61	..	..	67	6	61	..	..	67	507	1,267	..	..	1,774	1,841
4	14	1	..	19	5	22	1	..	28	1	985	..	..	986	1,014
..	..	..	..	..	..	..	..	..	..	19	1,690	..	..	1,709	1,709
..	2	..	..	2	..	4	..	..	4	4	104	..	..	108	112
2	8	..	..	10	2	8	..	..	10	3	574	..	..	577	587
13	150	1	..	164	15	161	1	..	177	545	6,086	..	..	6,631	6,808
Forests—Nil.															
Lands.															
..	..	..	..	..	..	..	..	..	..	..	3	..	..	3	3

Note for Central Circle.

Bellary—(1) Figure in column No. 27.—Under reserved forests was arrived at by converting cart-loads at 20 cubic feet a cart-load.
(2) Figures in column No. 28.—Under both reserved forests and reserved lands are actuals.
(3) Unreserved lands—Column No. 26.—Money value was converted into cubic feet at four annas a cubic foot for first class timber and two annas for second class timber.
Column No. 31.—Money value was converted into cubic feet at 12 annas per 20 cubic feet of green fuel and 6 annas per 20 cubic feet of dead fuel.

Guntur.—Figures in columns 18, 19 and 28 have been estimated by converting money at one cubic foot an anna and that in column 27 by converting ton into cubic feet at 100 cubic feet a ton.

Nellore.—The figures are actuals.

North, South and West Cuddapah districts.—The figures are actuals.

Chittoor.—Timber and fuel, under unreserved lands are estimates obtained by converting money value of timber at one anna a cubic foot and that of fuel at three pies a cubic foot.

Anantapur.—Figures under free grants are actuals and the others are estimates, 20 cubic feet of timber is taken as equivalent to cart-load valued at Rs. 2-8-0 and fuel at Rs. 1-4-0 a cart-load of 45 cubic feet.

Chingleput.—Timber quantity was based on the revenue at Rs. 5, Rs. 2-8-0 and Rs. 1-4-0 a cart-load of 20 cubic feet of I, and III class respectively.

Outturn (in thousands of cubic feet, solid) of timber and fuel

Division.	Timber in the rough logs.					Timber in the rough poles.					Sawn or square timber.				
	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
					(*In thousands of cubic feet.*)										CENTRAL
															IV. Unreserved
Bellary	..	..	..	..	..	..	40	..	..	40	..	..	..	..	..
Anantapur	..	122	2	..	124	..	..	..	..	..	..	..	..	..	..
Guntûr	..	..	..		..	..	..	..	..	..	..	..	.	..	..
Nellore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cuddapah, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chingleput	..	13	4	..	17	..	..	..	..	..	..	..	..	..	..
Chittoor	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total, Unreserved lands.	..	135	6	..	141	..	40	..	..	40	..	..	..	..	..
Grand total ..	..	138	6	..	144	1	48	..	..	49	1	..	..	..	1
															SOUTHERN
															I. Reserved
Vellore, North.. ..	2	..	..	..	2	..	..	..	..	..	3	..	..	..	3
Do. South.. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West	1	..	..	..	1	..	..	..	..	..	1	..	..	..	1
South Arcot	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Salem, North	..	..	..	..	..	..	..	..	..	..	2	..	..	..	2
Do. South	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Trichinopoly	1	..	..	..	1	..	..	..	..	..	1	..	..	..	1
Madura	3	..	..	..	3	..	..	..	..	..	..	..	..	..	..
Tinnevelly	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Total ..	9	..	..	..	9	..	..	..	..	..	7	..	..	..	7
															II. Leased
															III. Reserved
															IV. Unreserved
Vellore, North.. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South.. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West	..	24	1	..	25	..	..	..	..	..	..	..	..	..	..
South Arcot	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Salem, North	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Do. South	1	7	..	..	8	..	..	1	..	1	..	..	..	..	..
Trichinopoly	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madura	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tinnevelly	..	2	..	..	2	..	5	..	..	5	..	..	..	..	..
Total ..	1	33	1	..	35	..	5	1	..	6	1	..	..	..	1
															Ale
Vellore, North.. ..	2	..	..	..	2	..	..	..	..	..	3	..	..	..	3
Do. South.. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West	1	24	1	..	26	..	..	..	..	..	1	..	..	..	1
South Arcot	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Salem, North	..	..	..	..	..	..	..	..	..	..	3	..	..	..	3
Do. South	2	7	..	..	9	..	..	1	..	1	..	..	..	..	..
Trichinopoly	1	..	..	..	1	..	..	..	..	..	1	..	..	..	1
Madura	3	..	..	..	3	..	..	..	..	..	..	..	..	..	..
Tinnevelly	1	2	..	..	3	..	5	..	..	5	..	..	..	..	..
Grand total ..	10	33	1	..	44	..	5	1	..	6	8	..	..	..	8
															WESTERN
															I. Reserved
Mangalore, North ..	15	..	..	..	15	..	..	..	..	..	..	..	..	..	..
Do. South ..	65	4	..	..	69	..	..	..	..	..	..	..	..	..	..
Malabar, North ..	..	..	..	..	..	11	..	..	..	11	114	..	..	..	114
Do. South ..	112	1	..	..	113	23	..	..	..	23	..	..	..	..	..
The Nilgiris ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kollegal	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..
Coimbatore, North ..	4	..	..	..	4	..	..	..	..	..	8	..	..	..	8
Do. Central ..	55	30	..	..	85	..	..	..	..	..	..	..	..	..	..
Do. South ..	7	29	..	..	36	1	..	..	..	1	6	9	..	..	15
Total ..	258	64	..	..	322	36	..	..	..	36	128	9	..	..	137
															II. Leased
Malabar, South ..	103	14	..	..	117	13	..	..	..	13	..	..	..	..	..
Coimbatore, South ..	52	..	..	..	52	..	..	..	..	..	..	..	..	..	..
Total ..	155	14	..	..	169	13	..	..	..	13	..	..	..	..	..

during the year 1919–20 and agency of exploitation—*cont.*

Miscellaneous.					Total timber.					Fuel.					
Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers	Free-grantees.	Right-holders.	Total.	Total outturn.
(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
CIRCLE—*cont.*															
Lands.						(*In thousands of cubic feet:*)									
..	..	..	..	..	..	40	..	..	40	..	80	..	..	80	120
..	..	..	..	..	..	122	3	..	125	..	104	..	..	104	229
..	39	22	..	61	..	39	22	..	61	..	124	..	..	124	185
..	33	4	..	37	..	33	4	..	37	..	48	..	..	48	85
..	8	..	..	8	..	8	..	..	8	..	379	..	..	379	387
..	2	..	..	2	..	2	..	..	2	..	14	..	..	14	16
..	31	..	..	31	..	31	..	..	31	..	138	..	..	138	169
..	..	..	..	..	..	13	3	..	16	..	65	..	..	65	81
..	182	9	..	191	..	182	9	..	191	..	153	..	..	153	344
..	295	35	..	330	..	470	41	..	511	..	1,105	..	..	1,105	1,616
13	445	36	..	494	15	631	42	..	688	545	7,194	..	..	7,739	8,427
CIRCLE.															
Forests.															
..	1	5	..	6	5	1	5	..	11	6	224	..	..	230	241
4	7	..	..	11	4	7	..	..	11	4	123	..	..	127	138
2	..	..	..	2	4	..	..	..	4	2	1	..	..	3	7
..	..	..	..	..	..	..	..	..	..	2	45	..	..	47	47
..	4	..	..	4	2	4	..	..	6	1	429	..	..	430	436
..	..	..	..	..	1	..	..	..	1	..	176	..	..	176	177
..	..	..	..	..	2	..	..	..	2	4	304	..	..	308	310
..	7	..	..	7	3	7	..	..	10	5	677	..	..	682	692
..	66	..	..	66	1	66	..	..	67	3	2,564	..	..	2,567	2,634
6	85	5	..	96	22	85	5	..	112	27	4,543	..	..	4,570	4,682
Forests—Nil.															
Lands—Nil.															
Lands.															
..	82	3	..	85	..	82	3	..	85	..	58	..	..	58	143
..	142	5	..	147	..	142	5	..	147	..	18	..	..	18	165
..	..	..	..	..	..	24	1	..	25	..	11	..	..	11	36
..	28	2	..	30	..	28	2	..	30	..	400	..	..	400	430
..	106	11	..	117	1	106	11	..	118	..	156	..	..	156	274
..	47	..	..	47	1	54	1	..	56	1	73	..	..	74	130
..	120	4	..	124	..	120	4	..	124	..	164	..	..	164	288
..	210	..	..	210	..	210	..	..	210	..	86	..	..	86	296
..	..	8	..	8	..	7	8	..	15	..	78	..	..	78	93
..	735	33	..	768	2	773	35	..	810	1	1,044	..	..	1,045	1,855
tract.															
..	83	8	..	91	5	83	8	..	96	6	282	..	..	288	384
4	149	5	..	158	4	149	5	..	158	4	141	..	..	145	303
2	..	..	..	2	4	24	1	..	29	2	12	..	..	14	43
..	28	2	..	30	..	28	2	..	30	2	445	..	..	447	477
..	110	11	..	121	3	110	11	..	124	1	585	..	..	586	710
..	47	..	..	47	2	54	1	..	57	1	249	..	..	250	307
..	120	4	..	124	2	120	4	..	126	4	468	..	..	472	598
..	217	..	..	217	3	217	..	..	220	5	763	..	..	768	988
..	66	8	..	74	1	73	8	..	82	3	2,642	..	..	2,645	2,727
6	820	38	..	864	24	858	40	..	922	28	5,587	..	..	5,615	6,537
CIRCLE.															
Forests.															
..	..	..	..	..	15	..	..	..	15	143	..	..	..	143	158
..	..	..	..	..	65	4	..	..	69	64	21	..	..	85	154
..	..	..	..	..	125	..	..	..	125	..	..	..	..	..	125
1	..	..	..	1	136	1	..	..	137	1	..	..	..	1	138
3	12	..	..	15	3	12	..	..	15	392	8	..	..	400	415
3	..	..	..	3	4	..	..	..	4	..	203	..	..	203	207
1	..	..	..	1	13	..	..	..	13	..	655	..	..	655	668
..	..	..	..	..	55	30	..	..	85	10	1,238	..	..	1,248	1,333
3	10	..	..	13	17	48	..	..	65	7	227	..	..	234	299
11	22	..	..	33	433	95	..	..	528	617	2,352	..	..	2,969	3,497
Forests.															
4	1	..	..	5	120	15	..	..	135	2	..	..	..	2	137
4	..	..	..	4	56	..	..	..	56	..	..	..	..	..	56
8	1	..	..	9	176	15	..	..	191	2	..	..	..	2	193

Outturn (in thousands of cubic feet solid) of timber and fuel

Division	Timber in the rough logs.					Timber in the rough poles.					Sawn or square timber.				
	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
															WESTERN
	(*In thousands of cubic feet*).														*III. Reserved*
Nilgiris	..	..	..	..	..	..	..	..	..	..	55	..	..	..	55
															IV. Unreserved
Mangalore, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	112	1	10	123	..	..	..	..	..	..	..	..	..	..
Malabar, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
The Nilgiris ..	..	20	..	..	20	..	..	..	..	..	..	..	..	..	..
Kollegal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Coimbatore, North ..	..	29	..	..	29	..	..	..	..	..	..	..	..	..	..
Do. Central ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	..	161	1	10	172	..	..	..	..	..	..	..	..	..	..
Grand total ..	413	239	1	10	663	49	..	..	..	49	183	9	..	..	192
Grand total, Presidency.	536	841	32	17	1,426	109	176	5	40	330	210	16	7	..	233

REMARKS.—The figures are actuals except in the following cases:—

Factor of conversion.

Mangalore, North—Outturn under "purchasers" unreserved lands. *Timber.*—The sale amount is converted into yield, the factor of conversion being 16 cubic feet per rupee. *Fuel.*—The sale amount is converted into yield, the factor of conversion being three pies per cubic foot.

Mangalore, South—Outturn under all agencies except "Government" One tree = 25 cubic feet.

Malabar, North—Outturn under "Purchasers". Unreserved lands. *Timber.*—Estimate based on money value collected at four annas per cubic foot.

Malabar, South—Reserved forests (column 2), 4,000 cubic feet .. One log = 20 cubic feet.

Leased forests (column 2), 9,916 do. .. One log of above 12 candies = 160 cubic feet.
Do. 8 do. = 110 do.
Do. 6 do. = 80 do.
Do. 4 do. = 52 do.
Do. 2 do. = 26 do.
Do. below 2 do. = 20 do.
One short log = 4 cubic feet.

Reserved forests (column 7) .. .. Smaller classes of saplings are calculated approximately as per standard measurements
Leased forests .. ..
Reserved and leased forests .. .. Approximately calculated at ¼ cubic foot for karias and ½ cubic foot for junglewood posts.
Fuel column 27 .. ..

Kollegal—Reserved forests (column 7) .. .. 145 poles; 1 pole = 6·52 cubic feet.
Do. (column 17) .. .. Sandalwood 5,033 quarters and 21 lb. = 2,517 cubic feet, quarters, 1 cubic foot.

South Coimbatore. A reducing factor of ·7 has been adopted in the case of stacked fuel.

during the year 1919-20 and agency of exploitation—*cont.*

Miscellaneous.					Total timber.					Fuel.					
Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Total outturn.
(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
CIRCLE—*cont.*															
Lands.						(*In thousands of cubic feet*).									
..	..	..	..	..	55	..	..	..	55	..	..	..	..	..	55
Lands.															
..	461	..	13	474	..	461	..	13	474	..	619	..	..	619	1,093
..	..	..	..	..	..	112	1	10	123	..	92	..	..	92	215
..	9	..	..	9	..	9	..	..	9	..	..	..	..	..	9
..	..	..	..	..	..	20	..	..	20	..	..	..	..	..	20
..	5	..	..	5	..	5	..	..	5	..	1	..	..	1	6
..	..	..	..	..	..	29	..	..	29	3	14	..	..	17	46
..	217	..	..	217	..	217	..	..	217	..	87	..	..	87	304
..	692	..	13	705	..	853	1	23	877	3	813	..	..	816	1,693
19	715	..	13	747	664	963	1	23	1,651	622	3,165	..	..	3,787	5,438
54	2,084	81	14	2,243	919	3,117	125	71	4,232	1,974	19,653	7	354	21,988	26,220

ANNUAL FORM No. 77.

Forest Department, Madras Presidency.

Outturn of minor forest produce during the year 1919–20.

Circle.	Description of produce.	Produce removed or utilized					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value.	Value.	Value.	Value.
	Reserved Forests.	NO.	RS.	RS.	RS.	RS.	RS.
	Bamboos	715,588	13,601	81,639	519	262	1,01,021
	Grazing and fodder grass ..	..	..	1,50,334	12,966	1,289	1,64,589
	Other produce.	QRS.					
	Grass (hay, thatch, korai, etc.).	3,160	89	7,027	253	..	7,369
	Tamarind, soapnuts, galnuts, nux-vomica, shekoi, etc.	2,098	1,935	7,751	..	23,070	32,756
	Horns, honey, wax, resin, gum, skins, etc.	..	..	510	..	..	510
	Tangedu, etc., barks and fibres.	292	157	46,264	5	1	46,427
	Stone, gravel, earth, etc. ..	3,320	5	277	..	..	282
	Leaves for platters	..	..	150	..	..	150
	Date and palmyra leaves, stalks, etc.	..	..	201	..	..	201
	Manure leaves and thorns ..	..	..	728	..	..	728
	Miscellaneous including tree-tapping and tree owner's fees.	7,469	5,022	1,407	..	250	6,679
	Total, minor produce ..	16,339	7,208	64,315	258	23,321	95,102
	Total, Reserved forests ..	..	25,809	2,96,288	13,743	24,872	3,60,712
	Reserved Lands.	NO.					
	Bamboos	3,845	38	99	..	..	137
	Grazing and fodder grass ..	..	..	3,814	..	..	3,814
Northern Circle ..	*Other produce.*	QRS.					
	Grass (tharbi, korai, etc.) ..	704	1	7	..	..	8
	Tangedu, etc., barks and fibres.	..	..	1,600	..	..	1,600
	Miscellaneous including tree-tapping and tree owner's fees.	..	..	180	..	..	180
	Total, minor produce ..	704	1	1,787	..	..	1,788
	Total, Reserved lands ..	..	39	5,700	..	..	5,739
	Unreserved Lands.	NO.					
	Bamboos	19,992	180	33,515	..	262	33,957
	Grazing and fodder grass ..	..	..	927	..	..	927
	Other produce.	QRS.					
	Grass (tharbi, korai, etc.). ..	10,082	78	405	..	..	483
	Tamarind, soapnuts, galnuts, nux-vomica, shekoi, etc.	107	61	17,223	..	..	17,284
	Horns, honey, wax, resin, gum, skins, etc.	..	..	580	..	..	580
	Tangedu, etc., barks and fibres.	412	149	1,41,963	..	..	1,42,112
	Stone, gravel, earth, etc. ..	1,756	5	4,265	..	..	4,270
	Leaves for platters	..	..	245	..	..	245
	Date and palmyra leaves, stalks, etc.	40	1	83	66	..	150
	Manure leaves and thorns ..	2,120	3	1,292	..	..	1,295
	Miscellaneous including tree-tapping and tree owner's fees.	..	..	53,698	..	..	53,698
	Total, minor produce ..	14,517	597	2,19,754	66	..	2,20,117
	Total, Unreserved lands ..	..	477	2,54,196	66	262	2,55,001

Outturn of minor forest produce during the year 1919-20—*cont.*

Circle.	Description of produce.	Produce removed or utilized					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value.	Value.	Value.	Value.
	Abstract for the circle.	NO.	RS.	RS.	RS.	RS.	RS.
Northern Circle—*cont.*	Bamboos in number	7,39,425	18,819	1,15,253	519	524	1,35,115
	Grazing and fodder grass ..	..	..	1,55,075	12,966	1,289	1,69,330
	Other produce in quarters ..	31,560	7,506	2,85,856	324	23,321	3,17,007
	Grand total, Northern Circle ..	..	26,325	5,56,184	13,809	25,134	6,21,452
Central Circle ..	Bamboos	NO. 8,596	153	16,307	184	..	16,644
	Grazing and fodder grass ..	QR. 7,195	323	4,10,486	33	311	4,11,153
	Honey, wax, gum, etc.	211	3,932	693	..	..	4,625
	Tangedu, bark, etc.	174	351	4,35,408	..	..	4,35,759
	Date and palmyra leaves ..	662	4	3,893	215	..	4,112
	Manure leaf	..	..	7,776	..	..	7,776
	Thummari leaf	..	..	6,825	..	..	6,825
	Tamarind, soapnut and nux-vomica.	12,119	33,341	38,580	..	..	71,921
	Other miscellaneous produce including tree-owners' fees.	1,749	3,441	2,05,731	179	..	2,09,351
	Total ..	14,915	41,069	6,98,906	394	..	7,40,369
	Manganese ore, in tons ..	20,000	..	..	..	..	..
	Total of grass and grazing and minor produce.	QRS. 22,110 and 20,000 tons.	41,392	11,09,392	427	311	11,51,522
	Grand total ..	1,622,110	41,545	11,25,699	611	311	11,68,166
Southern Circle ..	Bamboos	NO. 10,433	885	1,39,041	110	..	1,40,036
	Grazing and fodder grass ..	QRS. 36,294	13,611	2,19,790	3,271	45	2,36,717
	Grass (thatch, korai, etc.) ..	QRS. 244	2	7,395	41	..	7,438
	Dammer, cardamoms, etc. ..	..	..	6,346	..	..	6,346
	Tamarind, soapnuts, gallnuts, etc.	1,581	760	80,678	..	..	81,438
	Avaram, vembadam, etc., barks.	..	..	1,01,199	..	..	1,01,199
	Stones, gravel and earth ..	2,772	5	7,344	122	..	7,471
	Manure leaves, thorns, etc. ..	..	..	6,486	56	..	6,542
	Horns, honey, wax, gum, etc. ..	75	124	1,229	..	..	1,353
	Date, palmyra leaves, etc. ..	..	..	312	72	..	384
	Miscellaneous, including tree-tapping fees.	4,552	602	87,731	..	865	89,198
	Total ..	9,224	1,493	2,98,720	291	865	3,01,369
	Grand total ..	..	15,989	6,57,551	3,672	910	6,78,122
	Reserved forests.						
Western Circle ..	Bamboos in number	NO. 62,044	2,767	42,416	4	..	45,187
	Grazing and fodder grass ..	48	49	1,24,993	1,021	..	1,26,063

Outturn of minor forest produce during the year 1919-20—*cont.*

Circle.	Description of produce.	Produce removed or utilized					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value.	Value.	Value.	Value.
Western Circle—*cont.*	*Other produce.*	QRS.	RS.	RS.	RS.	RS.	RS.
	Grass (thatch, korai, etc.) ..	..	..	227	..	..	227
	Dammer, turmeric, pepper, cardamoms, etc.	..	..	9,114	..	..	9,114
	Tamarind, soapnuts, gallnuts, nux-vomica, shekoi, etc.	58	62	4,045	..	..	4,045 62
	Horns, honey, wax, gum, resin, skin, etc.	35	1,650	1,700	..	..	3,350
	Avaram, vembadam, etc., barks and fibres.	1	1	33,195	..	..	.. 33,196
	Stones, earth, gravel, etc. ..	..	..	2,136	563	..	2,699
	Manure leaves, thorns, etc. ..	..	..	1,752	..	..	1,752
	Date and palmyra leaves ..	..	..	226	..	..	226
	Miscellaneous	3,697	742	16,027	..	..	16,769
	Total ..	3,791	2,455	68,422	563	..	71,440
	Leased forests.	NO.					
	Bamboos in number	235,626	11,782	28	..	..	11,810
	Grazing and fodder grass ..	..	..	553	118	..	671
	Other produce.	QRS.					
	Horns, honey, wax, gums, resin, skins, etc.	10	80	..	..	..	80
	Stones, earth, gravel, etc. ..	..	..	30	..	..	30
	Total ..	10	80	30	..	..	110
	Unreserved lands.	NOS.					
	Bamboos	100	2	106	8	..	114
	Grazing and fodder grass ..	QRS. 1,01,991	38,246	..	..	..	38,246
	Other produce.	QRS.					
	Catechu	714	7,301	..	..	..	7,301
	Tamarind, soapnuts, gallnuts, nux-vomica, shekoi, etc.	..	..	663	..	..	663
	Avaram, vembadam, etc., barks and fibres.	..	..	291	..	..	291
	Stones, gravel, earth, etc. ..	..	..	444	..	..	444
	Manure leaves, thorns, etc. ..	..	..	3	..	..	3
	Miscellaneous	..	..	14,294	..	..	14,294
	Total ..	714	7,301	15,695	..	..	22,996
	Abstract for the Circle.	NOS.					
	Bamboos	297,770	14,551	42,550	12	..	57,113
	Grazing and fodder grass ..	QRS. 102,039	38,295	1,25,546	1,139	..	1,64,980
	Other produce	4,515	9,836	84,147	563	..	94,546
	Grand total, Western Circle ..	..	62,682	2,52,243	1,714	..	3,16,639
	Total, Presidency, Bamboos ..	NO. 1,056,224	34,408	3,13,151	826	524	3,48,908
	Grazing and fodder-grass ..	..	52,229	9,10,897	17,409	1,645	9,82,180
	Other produce	..	59,904	13,67,629	1,572	24,186	14,53,291
	Grand total, Presidency ..	..	1,46,541	25,91,677	19,806	26,355	27,84,379

Annual Form No. 78.

Forest Department, Madras Presidency.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1919–20.

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
TIMBER (IN THOUSANDS OF CUBIC FEET).					
Northern Circle.					
Ganjām	70	101	171	89 (a) 5 (b) 1	76
Vizagapatam	1	3	4	3	1
Gōdāvari, Upper	1	72	73	66 (a) 4 (b) 1	2
Do. Lower	1	3	4	(a) 3	1
Kurnool, East	1	9	10	7 (a) 1	2
Do. South	2	1	3	..	3
Do. West	4	27	31	18 (b) 2	11
Total ..	80	216	296	200	96
Central Circle.					
Bellary	..	..	..	..	..
Anantapur	..	..	..	..	..
Guntūr	5	1	6	5	1
Cuddapah, North	..	1	1	1	..
Do. South	..	6	6	5	1
Do. West	..	5	5	4	1
Nellore	..	..	..	..	..
Chingleput	..	..	..	..	..
Chittoor	..	2	2	1	1
Total ..	5	15	20	16	4
Southern Circle.					
Vellore, North	3	5	8	8	..
Do. South	2	4	6	5	1
Do. West	4	4 + 5	8 + 5	5 + 5	3
South Arcot	..	..	..	..	..
Salem, North	1	3	4	3	1
Do. South	..	2	2	2	..
Trichinopoly	1	2	3	2	1
Madura	1	3	4	2	2
Tinnevelly	..	1	1	..	1
Total ..	12	24 (c) + 5	36 (c) + 5	27 (c) + 5	9
Western Circle.					
Mangalore, North	8	15	23	10 (a) 1	12
Do. South	75	65	140	45 (a) 1 (b) 2	92
Malabar, North	17	125	142	60 (b) 2	80
Do. South	470	256	726	256 (a) 15 (b) 2	453
The Nilgiris	6	58	64	48 (a) 2 (b) 1	13
Kollegal	2	4	6	2 (c) 3	1
Coimbatore, North	3	13 (c) 3	19	12 (a) 1 (b) 1	5
Do. Central	3	55	58	11	47
Do. South	129 (d) 3	73	205	37 (a) 7 (b) 4	157
Total ..	716	667	1,383	523	860
Grand total, Presidency ..	813	927	1,740	771	969

(a) Used departmentally.
(b) Written off the accounts.
(c) Transferred to or received from other districts and disposed of.
(d) Found excess in remeasurement.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1919-20—*cont.*

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
FUEL (IN THOUSANDS OF CUBIC FEET).					
Northern Circle.					
Ganjām	23	37	60	39 (*a*) 1	20
Vizagapatam	1	5	6	6	..
Gōdāvari, Upper	2	46	48	38 (*a*) 2	8
Do. Lower	..	13	13	12	1
Kistna	..	3	3	3	..
Kurnool, East	..	55	55	28	27
Do. South	19	..	19	10	9
Do. West	43	620	663	482 (*b*) 13	168
Total	88	779	867	634	233
Central Circle.					
Bellary	..	6	6	6	..
Anantapur	..	1	1	1	..
Guntūr	..	2	2	2	..
Cuddapah, North	..	2	2	2	..
Do. South	..	507	507	505	2
Do. West	..	1	1	1	..
Nellore	37	19	56	47	9
Chingleput	1	4	5	1	4
Chittoor	..	3	3	3	..
Total	38	545	583	568	15
Southern Circle.					
Vellore, North	..	6	6	6	..
Do. South	..	4	4	4	..
Do. West	..	2	2	2	..
South Arcot	1	2	3	3	..
Salem, North	..	1	1	1	..
Do. South	..	1	1	1	..
Trichinopoly	..	4	4	4	..
Madura	..	5	5	5	..
Tinnevelly	2	3	5	5	..
Total	3	28	31	31	..
Western Circle.					
Mangalore, North	102	143	245	150	95
Do. South	163	64	227	90 (*a*) 9 (*b*) 1	127
Malabar, South	..	3	3	2	1
The Nilgiris	215	392	607	408 (*b*) 2	197
Coimbatore, North	..	3	3	(*b*) 2	1
Do. Central	..	10	10	10	..
Do. South	..	7	7	1 (*a*) 4 (*b*) 2	..
Total	480	622	1,102	681	421
Grand total, Presidency	609	1,974	2,583	1,914	669

(*a*) Used departmentally.
(*b*) Written off the accounts.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1919-20—*cont.*

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
BAMBOOS (NUMBER).					
Northern Circle.					
Ganjām	..	4,650	4,650	700 (*a*) 3,950	..
Vizagapatam	140	3,495	3,635	3,295	340
Gōdāvari, Upper	..	21,835	21,835	21,835	..
Do. Lower	6,550	17,959	24,509	(*a*) 24,007	502
Kurnool, East	15,159	242,446	257,605	225,010 (*a*) 80 (*b*) 19,825	12,690
Do. South	320	2,070	2,390	(*a*) 2,070	320
Do. West	52,148	446,970	499,118	433,919	65,199
Total ..	74,317	7,39,425	813,742	734,691	79,051
Central Circle.					
Bellary	..	..	..	..	..
Anantapur	..	250	250	250	..
Guntūr	..	..	..	..	..
Cuddapah, North	216	1,000	1,216	1,216	..
Do. South	2,966	3,850	6,816	5,440	1,376
Do. West	450	865	1,315	1,315	..
Nellore	..	30	30	30	..
Chingleput	..	12	12	12	..
Chittoor	..	2,589	2,589	2,519	70
Total ..	3,632	8,596	12,228	10,782	1,446
Southern Circle.					
Vellore, North	..	..	..	..	..
Do. South	..	..	..	..	..
Do. West	..	2,035	2,035	2,035	..
South Arcot	..	100	100	100	..
Salem, North	234	1,053	1,287	1,185	102
Do. South	50	350	400	400	..
Trichinopoly	25	129	154	154	..
Madura	..	101	101	101	..
Tinnevelly	363	6,665	7,028	7,028	..
Total ..	672	10,433	11,105	11,003	102
Western Circle.					
Mangalore North	4,821	3,760	8,581	6,967 (*a*) 50 (*b*) 4	1,560
Do. South	4,855	5,596	10,451	3,336 (*a*) 150 (*b*) 2,818	4,147
Malabar, North	..	29	29	29	..
Do. South	248,122	272,781	520,903	79,799 (*a*)34,190 (*b*) 2,700	404,214
Kollegal	..	1,627	1,627	(*b*) 1,627	..
Coimbatore, North	..	5,300	5,300	475 (*b*) 4,730	95
Do. Central	..	8,677	8,677	8,527	150
Total ..	257,798	297,770	555,568	145,402	410,166
Grand total, Presidency ..	336,419	1,056,224	1,392,643	9,01,878	490,765

(*a*) Used departmentally.
(*b*) Written off the accounts.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1919-20—*cont.*

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
MINOR PRODUCE (QUARTERS OF 28 LB.).					
Northern Circle.					
Ganjām	4	4,632	4,636	4,632	54
Vizagapatam	4	892	896	38 (*a*) 716	142
Gōdāvari, Upper	2,470	14,640	17,110	(*a*) 16,203 (*b*) 507	400
Do. Lower	594	645	1,239	(*a*) 797	442
Kistna	78	995	1,073	1,048	25
Kurnool, East	1,640	7,684	9,324	7,606 (*a*) 424 (*b*) 139	1,155
Do. South	92	..	92	..	92
Do. West	8,768	2,022	10,790	1,185 (*b*) 298	9,307
Total ..	13,650	31,560	45,210	33,593	11,617
Central Circle.					
Bellary	97	1,600,224 *	1,600,331	299	1,600,032
Anantapur	240	24	264	208	56
Guntūr	327	180	507	478	29
Cuddapah, North	122	1,960	2,082	2,034	48
Do. South	1,273	3,792	5,065	4,181	884
Do. West	373	708	10,81	1,025	56
Nellore	5,326	15,104	20,430	18,121	2,309
Chingleput	59	15	74	74	..
Chittoor	97	103	200	115	85
Total ..	7,914	1,622,110	1,630,024	26,525	1,603,499
Southern Circle.					
Vellore, North	168	977	1,145	216	929
Do. South	260	172	432	215	217
Do. West	1,324	355	1,679	1,318	361
South Arcot, ...	1,041	2,774	3,815	3,614	201
Salem, North	129	6,309	6,438	5,489	949
Do. South	..	30,934	30,934	30,934	..
Trichinopoly	146	3,722	3,868	51	3,817
Madura	101	28	129	123	6
Tinnevelly	40	247	287	247	40
Total ..	3,209	45,518	48,727	42,207	6,520
Western Circle.					
Mangalore, North	1,641	53,172	54,813	54,812	1
Do. South	9,248	49,585	58,833	43,563	15,270
Malabar, North	..	67	67	18 (*b*) 48	1
Do. South	(*d*)	3	3	(*e*) 3	..
The Nilgiris	23	335	358	326 (*e*) 1	31
Kollegal	183	59	242	119	123
Coimbatore, North	331	3,301	3,632	63 (*b*) 3,436	133
Do. Central	1	(*e*) 36	37	36	1
Do. South	(*d*)	1	1	(*e*) 1	(*d*)
Total ..	11,427	106,559	117,986	102,426	15,560
Grand total, Presidency ..	36,200	18,05,747	1,841,947	204,751	1,637,196

(*a*) Used departmentally.
(*b*) Written off the accounts.
(*c*) Transferred to or received from other districts.
(*d*) Less than one quarter.
(*e*) Includes 5 qrs. of elephant tusks from other districts.

* Includes 1,600,000 qrs. or 20,000 tons of Manganese ore

Annual Form No. 79.

Forest Department, Madras Presidency.

Statement showing the value of timber and other produce at sale depots for the year 1919–20.

District.	Description of timber or produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.	
		Number.	Cubic feet.	Value	Number.	Cubic feet.	Value.	In favour of the year.	Against the year.
	Northern Circle.			Rs.			Rs.	Rs.	Rs.
Ganjam ..	Timber	..	19,794	24,059	..	2,933	4,889	..	19,170
Vizagapatam.	.... *	..	..	..	..	..	..	..	..
Kurnool, South.	Timber	..	1,950	966	..	3,408	1,704	738	..
	Fuel	..	19,193	711	..	8,625	162	..	549
Kurnool, West.	Fuel	..	179	39	..	..	..	..	39
Total ..	Timber	..	21,744	25,025	..	6,341	6,593	..	18,432
	Fuel	..	19,372	750	..	8,625	162	..	588
Total value.	....	..	..	25,775	..	..	6,755	..	19,020
	Central Circle.								
Nellore ..	Timber	17	47	47	33	37	37	..	10
	Fuel	..	36,725	4,591	..	9,260	1,158	..	3,433
	Minor forest produce.	MDS. 5,326	..	6,081	..	MDS. 2,309	4,180	..	1,901
	Southern Circle.								
Vellore, North.	Timber	..	2,514	314	..	100	12	..	302
	Fuel	..	140	9	..	300	18	9	..
	Minor produce ..	QRS. 168	..	89	QRS. 929	..	1,858	1,769	..
Vellore, South.	Timber	..	64	2,149	..	212	38,001	35,852	..
	Minor produce ..	QR. 1	..	1	..	..	..	..	1
Vellore, West.	Timber ..	..	2,910	1,03,812	..	1,112	40,032	..	63,780
	Minor produce ..	QRS. 120	..	2,395	QRS. 3	..	59	..	2,336
South Arcot.	....	..	..	..	..	..	..	..	..
Salem, North.	Timber	..	758	1,758	..	1,072	13,578	11,820	..
	Bamboos ..	234	..	117	102	..	51	..	66
	Minor produce ..	QRS. 129	..	241	QRS. 949	..	388	147	..
Salem, South.	Timber	..	313	268	..	94	227	..	41
	Bamboos	50	..	1	..	..	..	..	1
Trichinopoly.	Timber	..	308	557	..	506	815	258	..
	Bamboos ..	25	..	6	..	..	..	..	6
Madura ..	Timber	..	660	193	..	2,228	688	495	..
	Fuel	..	80	5	..	230	14	..	9
	Minor produce ..	QRS. 101	..	518	QRS. 6	..	5	..	513
Tinnevelly ..	Timber	..	106	11	..	971	125	114	..
	Fuel	..	..	..	..	175	18	18	..
	Bamboos ..	363	..	34	..	..	..	..	34
	Minor produce ..	QRS. 40	..	259	QR. 1	..	6	..	253
	Western Circle.								
Mangalore, North.	Timber	..	2,044	2,548	..	6,863	4,374	1,826	..
	Bamboos ..	4,521	..	540	..	..	..	..	540
Mangalore, South.	Timber	†..	3,377	3,427	..	7,247	7,247	3,820	..
	Fuel	†..	3,114	461	..	14,490	2,147	1,686	..
	Minor produce .	QRS. † 24	..	9	..	..	..	..	9
Malabar, North.	Timber	..	..	..	..	209	575	575	..

* The balances of timber and other produce shown in the last year's return were not at *sale depots* and are hence omitted.

† Omitted to be shown by the District Forest Officer in the last year's return.

Statement showing the value of timber and other produce at sale depots for the year 1919-20—*cont.*

District.	Description of timber or produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.	
		Number.	Cubic feet.	Value.	Number.	Cubic feet.	Value.	In favour of the year.	Against the year.
	Western Circle—cont.			RS.			RS.	RS.	RS.
Malabar, South.	Timber	..	..	..	..	45,204	90,408	90,408	..
	Fuel	..	8	2	..	855	29	27	..
	Bamboos ..	450	..	2	33,561	..	2,001	1,999	..
The Nilgiris.	Timber	..	5,569	12,346	..	13,352	26,702	14,356	..
	Fuel	..	4,553	511	..	2,961	354	..	157
		QRS.			QRS.				
	Minor produce ..	23	..	384	31	..	391	7	..
Kollegal ..	Timber	..	1,928	934	..	872	436	..	498
		QRS.			QRS.				
	Minor produce ..	(*b*) 183	..	366	123	..	246	..	120
Coimbatore, North.	Timber	..	3,543	1,05,954	..	5,593	1,30,209	24,255	..
	Fuel	..	..	..	..	912	57	57	..
	Bamboos ..	..	..	..	95	..	1	1	..
		QRS.			QRS.				
	Minor produce ..	331	..	49	133	..	19	..	30
Coimbatore, South.	Timber	..	9,447	15,254	..	18,908	23,739	8,485	..
	Minor produce ..	(*a*) ..	..	(*a*) 3	..	..	3	..	..
				ABSTRACTS.					
Northern Circle.	Timber	..	11,642	9,635	..	22,538	25,105	15,470	..
	Fuel	..	18,617	845	..	20,697	816	..	29
		QRS.			QRS.				
	Minor produce ..	1,270	..	603	4	..	36	..	567
	Total value ..	..	..	11,083	..	..	25,957	14,874	..
Central Circle.	Timber	..	..	..	..	..	..	..	..
	Fuel	..	..	..	..	..	..	..	..
	Bamboos ..	..	..	..	..	..	..	..	..
		MDS.			MDS.				
	Minor produce ..	2,213	..	1,049	3,846	..	3,745	2,696	..
Southern Circle.	Timber	..	7,633	1,09,062	..	6,295	93,478	..	15,584
	Fuel	..	220	14	..	705	50	36	..
	Bamboos ..	672	..	158	102	..	51	..	107
		QRS.			QRS.				
	Minor produce ..	559	..	3,503	1,888	..	2,316	..	1,187
	Total value ..	..	..	1,12,737	..	..	96,895	..	16,842
Western Circle.	Timber ..	..	25,908	1,40,463	..	98,248	2,83,690	1,43,227	..
	Fuel ..	..	7,675	974	..	19,218	2,587	1,613	..
	Bamboos ..	4,971	..	542	33,656	..	2,002	1,460	..
		QRS.			QRS.				
	Minor produce ..	561	..	811	287	..	659	..	152
	Total value ..	..	..	1,42,790	..	..	2,88,938	1,46,148	..
	Grand total, Presidency.	..	..	2,67,659	..	..	4,14,535	1,46,876	..

(*a*) Less than one quarter.
(*b*) Shown under 'cubic feet' instead of under 'quarters' in the last year's return.

ANNUAL FORM No. 80.

Forest Department, Madras Presidency.

Summary of revenue of the different districts for the year 1919-20.

ANNUAL

Forest Department,

Summary of revenue of the different district

Head of account.	Northern Circle									
	Direction.	Ganjam.	Vizagapatam.	Godavari, Upper.	Godavari, Lower.	Kistna.	Karnool, East.	Karnool, South.	Karnool, West.	Total.
Receipts.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
I. Timber and other produce removed from the forests by Government Agency—										
(*a*) Timber	..	68,686	1,700	44,304	135	21	3,709	685	6,838	1,26,078
(*b*) Firewood and charcoal	343	1,470	99	1,290	749	102	369	660	5,967	11,049
(*c*) Bamboos	..	14	..	2	216	..	5,968	3	12,221	18,424
(*d*) Sandalwood	..	..	..	..	..	..	..	..	..	..
(*e*) Grass and other minor produce.	..	15	112	..	34	20	4,999	..	1,849	7,029
II. Timber and other produce removed from the forests by consumers or purchasers—										
(*a*) Timber	..	12,119	2,085	2,031	13,021	2,463	1,003	3,170	3,115	39,007
(*b*) Firewood and charcoal	..	21,807	10,126	648	59,039	8,294	337	10,381	3,143	1,13,775
(*c*) Bamboos	..	5,356	17,001	7,616	47,495	7,350	1,871	30,142	..	1,16,831
(*d*) Grazing and fodder grass	..	8,175	4,011	7,548	13,938	14,047	51,305	16,929	99,247	1,55,200
(*e*) Other produce	4,526	952	12,916	6,444	29,374	15,989	23,743	22,621	1,27,484	2,44,049
(*f*) Rents for trees tapped	..	1,315	1,849	..	7,958	13,344	996	2,988	11,169	39,619
(*g*) Other items	..	..	..	..	..	..	..	..	..	..
(*h*) Commutation fees	..	..	..	..	..	..	..	..	..	..
III. Confiscated drift and waif-wood	..	1,204	129	629	5,407	144	243	1,205	1,180	10,141
IV. Revenue from forest not managed by Government—										
(*a*) Revenue from shared and private forests.	..	..	..	..	..	..	..	..	..	..
V. Miscellaneous—										
(*a*) Fines and forfeitures	..	2,660	2,132	1,005	3,759	2,745	4,641	7,621	7,004	31,567
(*b*) Other sources	20	1,938	2,186	914	8,357	5,333	5,698	2,600	1,880	28,926
Total, Receipts	4,889	1,25,711	54,346	72,431	1,89,482	69,852	1,04,882	99,005	2,21,097	9,41,695

Budget heads.	Southern Circle.									
	Direction.	Forest Engineer.	Vellore, North.	Vellore, South.	Vellore, West.	Arcot, South.	Salem, North.	Salem, South.	Trichinopoly.	Madura.
Receipts.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
I. Timber and other produce removed from the forests by Government Agency—										
(*a*) Timber	.	..	480	25	318	12	491	22	573	75
(*b*) Firewood and charcoal	..	..	1,000	77	34	118	101	..	390	225
(*c*) Bamboos	..	..	..	..	..	16	210	3	..	..
(*d*) Sandalwood	3,64,410	..	..	9,948	28,209	..	..	..	..	3
(*e*) Grass and other minor produce.	329	..	3,757	44	1,820	8	75	864	..	98
II. Timber and other produce removed from the forests by consumers or purchasers—										
(*a*) Timber	..	..	10,378	17,851	4,276	7,378	6,774	3,462	12,027	19,255
(*b*) Firewood and charcoal	..	..	19,802	9,613	2,764	32,134	15,922	5,855	19,823	61,281
(*c*) Bamboos	..	..	11,706	36,910	11,925	1	27,653	28,390	11,587	2,881
(*d*) Grazing and fodder grass	..	..	28,357	24,207	22,871	21,294	43,147	29,442	19,442	24,328
(*e*) Other produce	..	18	35,719	20,941	18,987	32,905	41,674	38,803	33,561	57,773
(*f*) Rents for trees tapped	..	..	7,697	1,239	767	5,187	1,578	228	18	..
(*g*) Other items	..	..	..	..	17	659	1,604	..	..	..
(*h*) Commutation fees	..	..	..	..	..	..	65	2,100	..	..
III. Confiscated drift and waif-wood	..	..	189	173	354	232	196	194	348	824
IV. Revenue from forest not managed by Government—										
(*a*) Revenue from shared and private forests.	..	..	..	..	..	..	..	..	..	..
V. Miscellaneous—										
(*a*) Fines and forfeitures	..	..	13,299	8,328	4,569	12,512	5,107	5,669	11,630	9,129
(*b*) Other sources	26	10	977	784	483	16,211	2,264	5,450	837	5,980
Total, Receipts	3,64,765	28	1,33,361	1,30,140	97,394	1,28,661	1,46,861	1,20,482	1,10,281	1,81,352

Northern Circle.—The Revenue under direction is distributed as follows :—
II. (*c*) Direction Rs. 76, Karnool South, Rs. 4,450.
II. (*b*) ,, ,, 19, Vizagapatam Re. 1.

Southern Circle.—Distribution of Revenue credited in Direction office accounts :—
I. (*d*) South Vellore (Rs. 95,941), West Vellore (Rs. 85,054), North Salem (Rs. 88,504), South Salem (Rs. 61,960), Trichinopoly Rs. 28,475), Tinnevelly (Rs. 4,476).
I. (*e*) South Vellore (Rs. 329).
V. (*b*) North Vellore (Rs. 3), South Vellore (Rs. 10), West Vellore (Re. 1), Forest Engineer (Rs. 12).

FORM No. 80.

Madras Presidency.

for the year 1919–20.

Central Circle.

Direction.	Bellary.	Anantapur.	Guntur.	Cuddapah, North.	Cuddapah, South.	Cuddapah, West.	Nellore.	Chingleput.	Chittoor.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
..	..	..	28	..	699	69	13	6	31	846
..	160	30	49	15	590	36	6,394	238	93	7,605
..	..	..	..	..	..	9	..	..	..	9
..	..	..	..	..	111	..	..	..	213	324
7,000	12	1	..	12	140	10	36,949	..	9	44,133
..	7,418	14,567	5,058	2,132	6,293	9,308	6,836	1,427	16,134	69,173
..	29,317	3,428	40,630	8,317	5,187	4,942	78,213	10,144	9,435	1,90,113
..	36	200	175	5,265	3,632	1,814	108	974	4,855	17,059
..	33,153	61,808	74,899	19,776	8,494	25,142	79,635	27,022	23,673	3,53,602
..	98,023	2,37,085	20,170	6,601	15,295	41,233	38,080	7,751	66,160	5,30,398
..	34,505	20,308	5,745	1,075	2,726	4,043	7,617	4,268	5,707	85,994
..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..
..	147	385	377	329	745	409	636	385	120	3,533
..	..	..	..	..	..	..	..	..	..	..
..	7,600	7,172	27,064	4,889	5,395	6,929	14,298	7,163	14,715	95,225
22,025	1,158	408	1,155	455	1,649	1,098	— 7,648	323	5,509	26,127
29,025	2,12,029	3,45,392	1,75,350	48,866	50,956	95,042	2,61,136	59,701	1,46,654	14,24,151

Western Circle.

Tinnevelly.	Total.	Direction.	North Mangalore.	South Mangalore.	North Malabar.	South Malabar.	The Nilgiris.	Kollegal.	North Coimbatore.	Central Coimbatore.	South Coimbatore.	Working Plans Office.	Forest Engineer.	Total.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
21	2,017	150	5,998	28,257	60,714	6,59,419	* 32,929	506	540	2,045	75,398	..	..	8,65,956
172	2,117	..	3,434	9,474	..	392	53,700	..	2	344	..	..	..	67,346
321	544	..	570	93	5	21,379	..	2	107	357	..	..	..	22,513
..	4,02,570	2,73,738	1,108	52	..	..	7,795	..	54,894	6	6,094‡	..	..	3,43,687
..	6,995	340	43,367	16,335	281	1	680	..	277	1,141	..	..	..	62,422
3,615	85,016	..	28,764	8,474	2,319	5,672	2,855	574	3,557	13,556	30,797	..	..	96,568
1,32,000	2,99,194	..	17,704	1,952	..	..	5,030	4,000	35,057	75,848	17,948	..	..	1,57,539
1,475	1,32,528	..	732	1,679	737	248	1,786	725 †	15,135	6,841	3,754	..	..	31,637
6,702	2,19,790	..	3,917	6,791	4,640	..	11,648	32,755	49,836	12,694	2,682	..	..	1,24,963
31,819	3,12,200	..	5,351	6,794	7,426	1,896	2,000	16,971	18,655	16,417	* 7,468	..	..	82,978
..	16,709	..	728	415	..	..	..	30	..	..	..	..	..	1,173
..	2,280	..	..	..	..	..	..	..	..	..	..	..	..	..
..	2,165	..	..	..	..	..	..	..	..	..	..	..	..	..
139	2,649	..	2,059	388	121	43	105	77	194	364	76	..	..	3,427
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6,407	76,650	..	4,767	5,257	221	2,017	1,202	2,929	9,440	18,340	4,353	..	..	48,626
1,888	34,910	38,443	985	3,076	4,727	4,309	7,591	1,995	3,841	5,761	10,167	..	..	80,895
1,84,559	15,98,334	3,12,671	119,484	89,037	81,191	6,95,376	1,27,421	60,564	1,91,535	1,53,714	1,58,737	..	..	19,89,730

NOTE.—The revenue under *Direction* is distributed as follows:—

I. (*a*) *South Coimbatore*, Rs. 150; I (*d*) *Kollegal*, Rs. 53,549 and *North Coimbatore*, Rs. 2,20,189, I (*e*) *The Nilgiris*, Rs. 340

V. (*b*) *Direction*, Rs. 89 and *South Coimbatore*, Rs. 38,454.

* Includes Rs. 236 pertaining to II (*d*).

† Includes Rs. 347 pertaining to II (*d*).

‡ Pertains to The Nilgiris.

Summary of expenditure of the different districts for the Forest year 1919–20.

Head of account.	Direction.	Ganjam.	Vizagapatam.	Godavari, Upper.	Godavari, Lower.	Kistna.	Kurnool, East.	Kurnool, South.	Kurnool, West.	Total.
Northern Circle.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
I. Refunds and Drawbacks—Forest Refunds ..	..	473	359	— 265	2,177	4,214	1,049	1,170	863	10,040
A. Conservancy and Works.										
I. Timber, etc., removed by Government Agency—										
(a) Timber	..	20,243	270	8,038	35	5	1,281	35	2,217	32,124
(b) Firewood and charcoal	..	49	— 1	1,567	171	..	519	..	3,698	6,003
(c) Bamboos	..	8	..	..	126	..	4,229	..	5,339	9,702
(d) Sandalwood	..	..	..	..	..	..	..	..	..	..
(e) Grass and other minor produce ..	.	— 56	..	..	83	..	2,495	..	— 1,012	1,510
II. Timber, etc., removed by consumers, etc. ..	..	5,268	3,778	1,621	12,936	1,843	4,242	5,527	10,318	45,533
III. Confiscated, drift and waifwood	..	25	..	21	790	7	2	20	55	920
IV. Forests not managed by Government ..	..	..	..	..	..	..	..	..	..	..
V. Rent of leased forests and payments to shareholders in forest managed by Government.	..	..	478	..	..	..	..	..	..	478
VI. Live-stock, stores, tools and plant—										
(a) Purchase of cattle	..	..	..	..	..	..	..	..	125	125
(b) Feed and keep of cattle	..	2,036	9	2,144	56	63	— 203	..	3,526	7,631
(c) Stores, tools and plant	6	365	480	870	6,041	764	356	177	322	9,381
VII. Communications and buildings—										
(a) Roads and bridges	..	3,937	854	662	2,218	2,824	4,933	3,364	1,948	20,740
(b) Buildings	..	7,713	2,011	5,171	4,158	1,108	6,034	2,458	3,757	32,410
(c) Other works	..	369	22	30	..	944	328	122	68	1,883
VIII. Demarcation, improvement and extension of forests—										
(a) Demarcation	..	30	..	1,098	401	188	280	..	886	2,883
(b) Cost of forest settlements compensation for land and rights.	..	..	..	..	..	..	..	..	..	..
(c) Surveys—										
(1) Local surveys	..	2,024	652	873	1,193	421	903	..	194	6,260
(2) Survey of India	..	..	..	..	..	..	— 79	..	..	— 79
(d) Working plans	..	1,775	— 7	..	..	..	..	..	..	1 768
(e) Sowing and planting	233	116	..	..	187	445	345	549	1,778	3,653
(f) Protection from fire	..	5,976	2,066	6,294	5,588	1,374	5,751	10,927	2,150	40,116
(g) Other works	..	224	28	262	249	4,202	190	56	788	5,999
IX. Miscellaneous—										
(a) Law charges	..	..	1	..	..	..	..	1	..	2
(b) Grain compensation allowance	..	..	..	..	..	..	..	..	..	..
(c) Local allowance for high prices	..	2,955	1,841	1,170	5,428	2,060	4,414	1,149	3,452	22,469
(d) Other charges	..	707	30	138	8	83	685	76	330	2,055
Total, A. Conservancy and Works ..	239	53,764	12,502	29,959	39,666	16,331	36,705	24,461	39,939	2,53,566
B. Establishment.										
I. Salaries—										
(a) Conservators	20,540	..	..	..	..	..	..	..	..	20,540
(b) Superior officers	..	19,961	4,084	3,205	12,035	6,600	5,351	5,855	16,719	73,810
(c) Subordinate forest and depot establishment.	1,060	31,299	10,655	16,139	18,623	11,182	16,935	20,950	22,813	1,49,656
(d) Office establishment	6,727	8,558	4,010	5,530	6,753	3,471	5,999	6,057	8,649	55,754
(e) Deputation and special allowances ..	..	2,988	400	7,025	280	14	— 3,552	2,382	2,700	12,237
(f) Grain compensation allowance	..	3	..	1	2	..	..	— 6	7	7
(g) Local allowances for high prices	803	7,896	,601	4,601	5,026	2,795	7,779	5,286	6,020	43,807
II. Travelling allowances—										
(a) Conservators	2,270	..	..	200	..	158	..	150	250	3,028
(b) Superior officers	..	3,481	1,969	1,700	1,462	1,276	1,828	987	3,199	15,902
(c) Subordinate forest and depot establishments.	242	9,446	2,477	4,238	6,319	3,590	5,454	5,993	7,229	44,988
(d) Office establishments	1,055	2,719	1,048	2,184	2,971	1,202	2,266	2,175	3,567	19,187
III. Contingencies—										
(a) Contract items—										
(1) Service postage, etc.	605	1,444	846	815	923	863	944	890	1,340	8,670
(2) Other contract contingencies	996	2,141	1,191	1,233	2,010	1,248	2,315	1,316	1,798	14,248
(b) Non-Contract items—										
(1) Rents, rates and taxes	656	98	33	150	198	120	288	58	141	1,742
(2) Sundries	75	45[illegible]	104	241	66	122	95	198	414	1,800
Total, B. Establishment ..	35,029	90,519	30,418	47,262	56,668	32,641	45,702	52,291	74,846	4,65,376
Grand Total of Expenditure, A and B ..	35,268	1,44,283	42,920	77,221	96,334	48,972	82 407	76,752	1,14,785	7,18,942

Summary of expenditure of the different districts for the Forest year 1919-20—*cont.*

Budget heads.	Bellary.	Anantapur.	Guntur.	Cuddapah, North.	Cuddapah, South.	Cuddapah, West.	Nellore.	Chingleput.	Chittoor.	Direction.	Total.
Central Circle.											
A. Conservancy and Works.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
I. Revenue and drawbacks	498	118	145	20	32	324	1,100	494	309	..	3,040
I. Timber and other produce removed from the forests by Government Agency—											
(*a*) Timber	..	..	1	..	— 2	..	..	..	134	..	133
(*b*) Firewood and charcoal	15	45	..	..	18	..	358	19	3	..	458
(*c*) Bamboos	..	..	..	..	..	..	..	..	..	..	..
(*d*) Sandalwood	..	..	..	..	20	..	..	..	80	..	100
(*e*) Grass and other minor produce ..	..	38	82	2,317	3	2,848	4,404	..	1,664	..	11,356
II. Timber and other produce removed from the forests by consumers or purchasers.	2,439	2,482	2,490	3,328	5,328	4,171	2,735	964	4,091	..	28,028
III. Confiscated, drift and waif-wood	..	8	2	9	1	14	57	17	27	..	135
V. Rent of leased forests and payments to shareholders in forests managed by Government.	..	..	..	..	..	..	..	..	..	..	..
VI. Live-stock, stores, tools and plant—											
(*a*) Purchase of cattle	..	..	..	..	..	..	..	35	..	..	35
(*b*) Feed and keep of cattle	..	.	..	..	..	..	12	53	..	..	65
(*c*) Stores, tools and plant	29	104	72	219	149	715	1,353	1,137	1,074	..	4,852
VII. Communications and buildings—											
(*a*) Roads and bridges	..	317	1,088	3,609	6,395	3,750	1,000	920	3,957	..	21,036
(*b*) Buildings	785	1,971	3,861	3,243	13,463	3,018	4,247	5,266	8,141	..	43,995
(*c*) Other works	12	20	312	485	267	117	620	206	709	..	2,748
VIII. Demarcation, improvement and extension of forests—											
(*a*) Demarcation	1,552	394	283	163	..	75	1,219	1,317	485	..	5,488
(*b*) Cost of forest settlement; compensation for land and rights.	..	..	..	1,041	505	9,336	78	785	6	..	11,751
(*c*) Surveys .. Local	275	..	..	..	..	..	..	— 6	..	405	674
(*c*) Surveys .. India	..	..	..	..	..	..	..	..	..	..	..
(*d*) Working plans	..	..	226	..	16	..	..	..	2	..	244
(*e*) Sowing and planting	502	291	96	175	169	462	108	131	1,686	..	3,620
(*f*) Protection from fire	1,485	1,307	..	6,674	4,694	4,822	1,881	1,908	2,374	..	25,125
(*g*) Other works	2,668	5,373	5,929	989	4,691	4,248	6,751	10,421	7,674	..	48,744
IX. Miscellaneous—											
(*a*) Law charges	..	.	..	..	..	9	..	..	27	..	36
(*b*) Grain compensation allowance		..	..	..	..	..	2	..	..	..	2
(*c*) Local allowance for high prices ..	1,677	3,424	5,236	1,771	1,350	3,376	1,146	1,232	4,685	98	23,995
(*d*) Other charges	..	..	23	22	206	4 8	24 6	..	746	..	1,291
Total, A. Conservancy and Works ..	11,419	15,774	19,701	24,045	37,273	37,009	26,217	24,405	37,565	503	2,33,911
B. Establishments.											
I. Salaries—											
(*a*) Conservators	..	..	..	..	..	..	..	..	..	26,910	26,910
(*b*) Superior officers	4,435	7,977	8,935	3,543	9,542	4,114	12,561	3,380	12,520	20,014	87,021
(*c*) Subordinate Forest and Depot establishments.	18,634	20,415	21,110	19,682	22,800	19,210	28,650	17,055	25,023	517	1,93,096
(*d*) Office establishments	4,983	5,273	5,245	4,747	5 578	5,861	6,277	4,083	5,659	6,580	54,286
(*e*) Deputation and special allowances	— 1,453	— 6,701	-1,508	-1,179	--1,568	— 1,277	--1,277	-- 1,903	— 1,656	— 202	— 18,323
(*f*) Grain compensation allowance	7	1	.	2	3	10	2	..	10	..	35
(*g*) Local allowances for high prices	6,895	1,300	6,458	6,659	7,427	6,271	9,144	7 354	8,621	1,211	66,741
II. Travelling allowances—											
(*a*) Conservators	..	15	343	33	..	..	80	..	178	1,141	2,240
(*b*) Superior officers	850	1,506	1,842	1.054	2,132	852	1,780	1,366	2,310	558	14,250
(*c*) Subordinate forest and depot establishments	4,495	4,988	4,767	5,23	5,613	5,409	6,718	4,797	6,251	421	48,694
(*d*) Office establishments..	1,15	1,181	1,034	1,077	2,028	1,361	1,572	1,268	2,279	958	13,917
III. Contingencies—											
(*a*-1) Rents, rates and taxes	562	668	610	324	501	440	907	397	1,202	651	6,262
(*a*-2) Sundries	1,827	1,710	1,050	1,706	1,582	1,034	1,793	1,074	1,941	1,075	14,792
(*b*-1) Service postage and telegam charges ..	98	143	106	38	118	158	109	658	107	29	1,535
(*b*-2) Sundries	321	125	95	..	25	4	435	18	479	..	1,531
Total, B. Establishments ..	42,813	49,547	50,087	43,227	55,78	43,447	68,751	39,547	64,924	59,863	5,17,987

Summary of expenditure of the different districts for the Forest year 1919-20—*cont.*

Budget heads.	Direction.	Forest Engineer.	Vellore, North.	Vellore, South.	Vellore, West.	Arcot, South.	Salem, North.	Salem, South.	Trichinopoly.	Madura.	Tinnevelly.	Total.
Southern Circle.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Refunds and Drawbacks	..	182	3,118	4,723	9,561	248	67	801	1,955	704	253	21,612
A. Conservancy and Works.												
I. Timber and other produce removed from the forests by Government Agency—												
(*a*) Timber	..	..	120	49	100	5	312	..	296	567	10	1,459
(*b*) Firewood and charcoal ..	..	..	173	..	..	7	61	..	..	..	7	248
(*c*) Bamboos	..	..	..	..	..	..	113	..	..	..	233	346
(*d*) Sandalwood	..	..	..	3,946	3,844	253	5,250	5,615	2,097	—6	316	21,315
(*e*) Grass and other minor produce.	..	..	331	..	167	2	927	4,673	..	..	..	6,100
II. Timber and other produce removed from the forests by consumers or purchasers.	..	..	1,939	1,000	849	753	1,779	2,705	791	2,947	2,703	15,466
III. Confiscated drift and waif-wood.	..	..	11	..	22	1	..	7	4	160	..	205
VI. Livestock, stores, tools and plant—												
(*a*) Purchase of cattle ..	..	..	..	..	..	..	..	..	..	..	..	..
(*b*) Feed and keep of cattle ..	..	..	..	..	..	..	1	..	..	..	..	1
(*c*) Stores, tools and plant ..	75	27	745	298	523	2,274	508	152	458	807	647	6,514
VII. Communications and buildings—												
(*a*) Roads and bridges	..	93,741	2,616	112	—206	10	1,323	2,064	2,407	16,981	3,261	1,22,309
(*b*) Buildings	..	..	4,375	3,971	1,660	741	2,701	2,898	2,720	10,323	2,544	31,933
(*c*) Other works	..	..	747	125	913	17	198	147	878	700	87	3,812
VIII. Demarcation, improvement and extension of forests—												
(*a*) Demarcation	..	..	350	13	229	539	30	325	299	758	150	2,693
(*b*) Cost of forest settlement; compensation for land and rights.	..	..	189	392	36	..	20,000	2	..	1,166	3,003	24,788
(*c*) Surveys .. { Local ..	..	..	482	..	392	408	606	701	406	..	..	2,995
{ India ..	..	..	..	..	..	..	..	..	..	..	..	..
(*d*) Working plans	..	..	..	..	1	..	..	15	..	..	..	16
(*e*) Sowing and planting ..	..	..	2,975	884	76	61	1,378	2,277	59	2,897	1,016	11,623
(*f*) Protection from fire ..	..	..	803	800	525	246	1,843	2,293	618	4,592	4,900	16,620
(*g*) Other works	..	..	4,161	4,258	6,769	2,142	6,505	6,696	1,934	7,939	3,817	44,221
IX. Miscellaneous—												
(*a*) Law charges	..	..	7	..	..	..	11	6	20	..	17	61
(*b*) Other charges	50	..	205	80	177	46	875	2,780	25	..	1,371	5,609
(*c*) Local allowances	..	..	3,788	2,294	1,192	1,454	8,627	4,053	1,360	6,144	2 527	26,439
(*d*) Grain compensation allowance.	..	..	..	..	..	..	..	.	4	..	..	4
Total, A. Conservancy and Works ..	125	93,768	24,017	18,222	17,269	8,959	48,048	37,409	14,376	55,975	26,609	3,44,777
B. Establishments.												
I. Salaries—												
(*a*) Conservators	27,010	..	..	..	..	..	..	..	..	..	..	27,010
(*b*) Superior officers	1,300	4,888	7,209	10,349	7,903	4,452	7,369	9,644	4,550	4,939	6,158	68,761
(*c*) Subordinate Forest and Depot establishments.	1,057	3,457	12,032	12,823	12,323	9,112	26,126	21,424	15,477	24,130	20,472	1,58,433
(*d*) Office establishments ..	7,340	2,452	4,228	5,318	4,721	3,781	6,533	7,321	5,297	5,767	5,820	58,578
(*e*) Deputation and special allowances.	116	1,025	—1,397	— 907	—640	1,769	—1,497	—589	—483	—876	2,585	— 894
(*f*) Grain compensation allowance.	..	..	..	2	1	8	—2	1	7	1	..	18
(*g*) Local allowance	1,205	931	4,912	4,884	4,399	5,197	7,922	7,143	4,747	7,669	3,348	52,357
II. Travelling allowances—												
(*a*) Conservators	1,201	..	..	91	62	..	..	..	.	92	..	1,446
(*b*) Superior officers	137	1,386	1,715	1,910	1,561	2,120	1,284	1,835	1,549	2,027	1,377	16,901
(*c*) Subordinate forest and depot establishments	366	1,303	3,089	3,353	3,982	2,592	7,819	4,600	3,279	7,779	5,065	43,227
(*d*) Office establishments	821	428	1,236	734	793	1,281	1,187	1,455	902	2,378	1,327	12,542
III. Contingencies—												
(*a*) { 1. Service postage and telegram charges.	814	..	799	789	704	893	1,483	587	923	1,0 9	738	8,769
(*a*) { 2. Other contract contingencies.	899	..	766	803	1,221	1,426	992	2,128	1,084	1,898	1,462	12,679
(*b*) { 1. Rents, rates and taxes ..	..	487	121	235	118	327	65	87	21	226	212	1,899
(*b*) { 2. Sundries	16	5 7	38	169	..	..	173	127	77	176	208	1,511
Total, B. Establishments ..	42,282	16,884	34,748	40,553	37,148	32,958	59,454	55,703	37,430	57,245	48,772	4,65,237
Grand Total of Expenditure, A and B.	42,407	1,10,652	58,765	58,775	54,417	41,917	1,07,502	93,172	51,806	1,13,220	75,581	8,08,014

Summary of expenditure of the different districts for the Forest year 1919–20—*cont.*

Budget heads.	Direction.	North Mangalore.	South Mangalore.	North Malabar.	South Malabar.	The Nilgiris.	Kollegal.	North Coimbatore.	Central Coimbatore.	South Coimbatore.	Working-plans office.	Forest Engineer.	Forest Research Officer.	Total.
Western Circle.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs	Rs.	Rs.	Rs.	Rs.	Rs.	Rs	As.	Rs.
I. Refunds and Drawbacks ..	..	197	9,592	5	506	317	25	5,425	477	1,797	..	182	..	18,525
A. Conservancy and Works.														
I. Timber and other produce removed from the forests by Government Agency—														
(*a*) Timber	..	3,675	16,297	8,575	74,328	5,025	42	164	4,711	21,466	..	..	..	1,34,233
(*b*) Firewood and charcoal.	..	2,393	6,118	..	..	31,650	52	..	87	..	..	..	..	40,300
(*c*) Bamboos	..	86	..	..	34,153	..	..	67	69	..	..	..	..	34,375
(*d*) Sandalwood	..	50	..	..	..	127	3,717	14,091	7	..	..	..	..	17,992
(*e*) Grass and other minor produce.	340	6,350	8,626	92	230	217	30	75	36	..	..	..	..	15,996
II. Timber and other produce removed from the forests by consumers or purchasers.	..	2,985	2,179	487	1,634	176	2,756	4,165	2,654	1,816	..	..	..	18,852
III. Confiscated, drift and waif-wood.	..	106	32	..	..	..	17	1	27	7	..	..	..	190
V. Rent of leased forests and payments to shareholders in forests managed by Government.	..	..	..	112	1,511	..	..	..	..	2,500	..	..	..	4,123
VI. Live-stock, stores, tools and plant—														
(*a*) Purchase of cattle ..	12,052	..	3,607	3,874	1,832	2,806	..	..	633	4,354	..	..	..	29,158
(*b*) Feed and keep of cattle.	..	..	8,229	14,695	48,007	30,051	..	..	4,252	37,434	..	..	..	1,42,668
(*c*) Stores, tools and plant.	421	379	357	1,236	11,254	1,807	49	1,660	14,556	5,545	..	27	394	37,685
VII. Communications and buildings—														
(*a*) Roads and bridges ..	—16	2,983	3,551	2,142	6,772	5,687	4,269	14,002	19,866	6,878	..	3,536	..	69,120
(*b*) Buildings	..	695	5,702	3,707	9,506	5,134	4,403	6,767	8,253	5,370	..	..	..	49,537
(*c*) Other works	—9	821	614	92	278	326	426	615	569	2,669	..	..	..	6,401
VIII. Demarcation, improvement and extension of forests—														
(*a*) Demarcation	..	318	25	929	2,985	837	656	539	681	81	..	..	..	7,051
(*b*) Cost of Forest Settlement; compensation for land and rights.	..	36	..	..	..	..	..	..	962	..	..	..	..	998
(*c*) Surveys .. { Local ..	..	..	521	20	607	1,354	255	693	1,026	13	..	..	..	4,489
{ India ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(*d*) Working-plans ..	..	..	..	..	11	..	..	..	12	..	299	..	..	322
(*e*) Sowing and planting..	749	515	1,622	920	16,401	1,095	578	2,091	2,395	697	..	..	157	27,220
(*f*) Protection from fire ..	..	1,576	2,342	5,834	3,753	5,274	3,002	3,572	4,667	3,073	..	..	..	33,093
(*g*) Other works	..	128	1,506	2,838	1,677	1,967	2,211	7,612	5,752	5,417	..	..	..	29,108
IX. Miscellaneous—														
(*a*) Law charges	..	..	24	32	52	40	—150	2	..	..	..	..	..	..
(*b*) Grain compensation allowance.	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(*c*) Local allowance ..	81	1,584	2,503	2,654	1,349	5,030	1,548	1,387	1,878	4,035	..	..	..	22,049
(*d*) Other charges	121	181	1,006	640	2,291	3,148	66	588	1,201	2,987	..	..	563	12,792
Total ..	13,739	24,861	64,861	48,879	218,631	101,701	23,927	58,091	74,294	103,842	299	3,563	1,114	7,37,802
B. Establishments.														
I. Salaries—														
(*a*) Conservators	39,870	..	..	..	..	3,000	..	..	..	..	..	..	..	42,870
(*b*) Superior officers	9,044	3,574	5,103	5,431	10,725	11,819	3,421	9,636	8,468	25,517	300	4,888	3,756	101,682
(*c*) Subordinate Forest and Depot establishments.	1,030	12,392	12,087	8,759	10,949	16,140	11,790	18,030	18,783	13,041	565	3,457	2,132	129,155
(*d*) Office establishments ..	6,377	4,427	4,085	3,787	5,151	5,775	3,972	5,498	5,052	6,814	439	2,452	522	54,351
(*e*) Deputations and other allowances.	249	— 978	—1,235	8,410	— 943	6,224	385	2,858	— 1,223	2,928	816	1,025	..	18,516
(*f*) Grain compensation allowance.	..	.	—3	..	..	..	5	..	1	..	..	..	..	3
(*g*) Local allowances for high prices.	1,109	4,662	4,662	4,876	4,264	5,183	4,006	2,811	6,875	4,209	..	931	198	43,786
II. Travelling allowances—														
(*a*) Conservators	3,894	..	200	.	150	..	..	..	..	..	..	..	..	4,244
(*b*) Superior officers	2,516	1,674	1,991	1,748	4,063	1,254	1,882	1,331	2,645	2,733	160	1,386	604	23,987
(*c*) Subordinate forest and depot establishments.	580	3,212	3,979	3,152	4,608	3,432	2,195	4,072	6,443	3,337	323	1,303	512	37,148
(*d*) Office establishments ..	1,187	843	1,183	882	1,311	1,016	716	1,050	1,702	1,343	153	428	573	12,387
III. Contingencies—														
(*a*) Contract items—														
(1) Service postage and telegram charges.	1,295	1,126	1,400	690	955	1,276	598	914	682	919	19	— 1	72	9,946
(2) Other contract contingencies.	3,126	1,413	1,175	994	1,723	1,148	1,721	2,310	1,134	883	36	..	783	16,446
(*b*) Non-contract items—														
(1) Rents, rates and taxes.	87	..	..	..	..	132	620	29	149	797	..	488	..	2,302
(2) Sundries	64	396	4	—56	218	527	130	144	73	904	..	527	19	2,950
Total ..	70,428	32,741	34,631	38,673	43,174	56,926	31,441	48,683	50,784	63,425	16,884	9,171	2,811	4,99,772

Summary of receipts and expenditure during 1919-20 for each circle and for the Presidency compiled in the Chief Conservator's office from the Conservators' statements.

Budget heads.	Northern Circle.	Central Circle.	Southern Circle.	Western Circle.	Grand total, Presidency	
					1919-20.	1918-19.
RECEIPTS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
I. Timber and other produce removed from the forests by Government agency—						
(a) Timber	126,078	846	2,017	8,65,956	9,94,897	6,86,073
(b) Firewood and charcoal ..	11,049	7,605	2,117	67,346	88,117	83,288
(c) Bamboos	18,424	9	544	22,513	41,490	33,369
(d) Sandalwood	..	324	4,02,570	3,43,687	7,46,581	6,17,655
(e) Grass and other minor produce.	7,029	44,133	6,995	62,422	1,20,579	1,58,699
Total, I ..	1,62,580	52,917	4,14,243	13,61,924	19,91,664	15,79,084
II. Timber and other produce removed from the forests by consumers, etc.—						
(a) Timber	39,007	69,173	85,016	96,568	2,89,764	2,47,579
(b) Firewood and charcoal ..	1,18,775	1,90,113	2,99,194	1,57,539	7,60,621	7,57,935
(c) Bamboos	1,16,831	17,059	1,32,528	31,637	2,98,055	2,79,114
(d) Grazing and fodder grass..	1,55,200	3,53,602	2,19,790	1,24,963	8,53,555	8,24,111
(e) Other produce	2,44,049	5,30,398	3,12,200	82,978	11,69,625	6,20,538
(f) Tree-owners' fees	39,619	85,994	16,709	1,173	1,43,495	1,34,167
(g) Other items	..	..	2,280	..	2,280	4,518
(h) Commutation fees	..	..	2,165	..	2,165	13,380
Total, II ..	7,08,481	12,46,339	10,69,882	4,94,858	35,19,560	28,81,342
III. Confiscated drift and waifwood ..	10,141	3,533	2,649	3,427	19,750	9,564
IV. Revenue from forests not managed by Government Revenue from should private forests.	..	..	..	..	..	..
V. Miscellaneous—						
(a) Fines and forfeitures ..	31,567	95,225	75,650	48,626	2,52,068	1,96,294
(b) Other sources	28,926	26,137	34,910	80,895	1,70,868	2,50,225
Total, V ..	60,493	1,21,362	1,11,560	1,29,521	4,22,936	4,46,519
Grand Total, Receipts ..	9,41,695	14,24,151	15,98,334	19,89,730	59,53,910	49,16,509
EXPENDITURE.						
I. Refunds and Drawbacks	10,040	3,040	21,612	18,523	53,215	35,946
A. Conservancy and Works.						
I. Timber and other produce removed from the forests by Government agency—						
(a) Timber	32,124	133	1,459	1,34,283	1,67,999	1,40,376
(b) Firewood and charcoal ..	6,003	458	248	40 300	47,009	55,565
(c) Bamboos	9,702	..	346	34,375	44,423	34,281
(d) Sandalwood	..	100	21,315	17,992	39,407	28,773
(e) Grass and other minor produce.	1,610	11,356	6,1 0	15,996	34,962	84,016
Total, A-I ..	49,339	12,047	29,468	2,42,946	3,33,800	3,43,011
II. Timber and other produce removed from the forests by consumers or purchasers.	45,533	28,028	15,466	18,852	1,07,879	1,37,359
III. Confiscated drift and waifwood ..	920	135	205	190	1,450	1,295
V. Rent of leased forests by payments to shareholders in forests managed by Government.	478	..	..	4,123	4,601	6,625
VI. Live-stock, stores, tools and plant—						
(a) Purchase of cattle ..	125	35	..	29,158	29,318	22,820
(b) Feed and keep of cattle ..	7,631	65	1	1,42,668	1,50,365	1,22,001
(c) Stores, tools and plant ..	9,381	4,852	6,514	37,685	58,432	49,428
Total, A-VI ..	17,137	4,952	6,515	2,09,511	2,38,115	1,94,249
VII. Communications and buildings—						
(a) Roads and bridges ..	20,740	21,056	1,22,309	69,120	2,33,205	1,46,734
(b) Buildings	32,410	43,995	31 933	49,537	1,57,875	1,33,837
(c) Other works	1,883	2,748	3,812	6,401	14,844	10,466
Total, A-VII ..	55,033	67,779	1,58,054	1,25,058	4,05,924	2,91,037

Summary of receipts and expenditure during 1919-20 for each circle and for the Presidency compiled in the Chief Conservator's office from the Conservators' statements—*cont.*

Budget heads.	Northern Circle.	Central Circle.	Southern Circle.	Western Circle.	Grand total, Presidency.	
					1919-20.	1918-19.
EXPENDITURE—*cont.*	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
A. Conservancy and Works—cont.						
VIII. Demarcation, etc.—						
(*a*) Demarcation	2,883	5,488	2,693	7,051	18,115	18,620
(*b*) Cost of forest settlement.	..	11,751	24,788	998	37,537	14,483
(*c*) Surveys. (1) Local ..	6,260	674	2,995	4,489	14,418	13,966
(2) India ..	— 79	..	..	..	— 79	334
(*d*) Working-plans	1,768	244	16	322	2,350	4,368
(*e*) Sowing and planting ..	3,653	3,620	11,623	27,220	46,116	47,075
(*f*) Protection from fire ..	40,116	25,125	16,620	33,093	1,14,954	1,22,241
(*g*) Other works	5,999	48,744	44,221	29,108	1,28,072	1,81,366
Total, A-VIII ..	60,600	95,646	1,02,956	1,02,281	3,61,483	4,02,453
IX. Miscellaneous—						
(*a*) Law charges	2	36	61	..	99	558
(*b*) Grain compensation ..	..	2	4	..	6	4,431
(*c*) Local allowance for high prices.	22,469	23,995	26,439	22,049	94,952	..
(*d*) Other charges	2,055	1,291	5,609	12,792	21,747	13,630
Total, A-IX ..	24,526	25,324	32,113	34,841	1,16,804	18,619
Total, A. Conservancy and Works.	2,53,566	2,33,911	3,44,777	7,37,802	15,70,056	14,30,594
B. Establishments.						
I. Salaries—						
(*a*) Conservators	20,540	26,910	27,010	42,870	1,17,330	86,443
(*b*) Superior officers	73,810	87,021	68,761	1,01,682	3,31,274	3,19,423
(*c*) Subordinate Forest and Depot establishment.	1,49,656	1,93,096	1,58,433	1,29,155	6,30,340	4,87,680
(*d*) Office establishment ...	55,754	54,286	58,578	54,351	2,22,969	2,27,924
(*e*) Deputation and special allowances.	12,237	— 13,323	— 894	18,516	16,536	1,68,303
(*f*) Grain compensation allowance.	7	35	18	3	63	26,220
(*g*) Local allowance for high prices.	43,807	66,741	52,357	43,786	2,06,691	..
Total, B-I ..	3,55,811	4,14,766	3,64,263	3,90,363	15,25,203	13,15,993
II. Travelling allowance—						
(*a*) Conservators	3,028	2,240	1,446	4,244	10,958	..
(*b*) Superior officers	15,902	14,250	16,901	23,987	71,040	..
(*c*) Subordinate Forest and Depot establishments.	44,988	48,694	43,227	37,148	1,74,057	..
(*d*) Office establishment ..	19,187	13,917	12,542	12,387	58,033	..
Total B-II ..	83,105	79,101	74,116	77,766	3,14,088	2,60,677
III. Contingencies—						
(*a*) Contract items—						
(1) Service postage ..	3,670	6,262	8,769	9,945	33,646	34,733
(2) Other contract contingencies.	14,248	14,792	12,679	16,446	58,165	53,818
(*b*) Non-contract items—						
(1) Rents, rates and taxes.	1,742	1,535	1,899	2,302	7,478	6,402
(2) Sundries	1,800	1,531	1,511	2,950	7,792	29,722
Total, B-III ..	26,460	24,120	24,858	31,643	1,07,081	1,24,675
Total, B. Establishment ..	4,65,376	5,17,987	4,63,237	4,99,772	19,46,372	17,01,345
Grand Total, A and B:—Expenditure.	7,18,942	7,51,898	8,08,014	12,37,574	35,16,428	31,31,939
Surplus ..	2,22,753	6,72,253	7,90,320	7,52,156	24,37,482	17,84,570
Total ..	9,41,695	14,24,151	15,98,334	19,89,730	59,53,910	49,16,509

ANNUAL FORM No. 81.

Forest Department, Madras Presidency.

Outstandings and liabilities on account of contractors and disbursers for the Forest year 1919-20.

District.	Department debtor.			Department creditor.			Balance due.	
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To department (outstandings).	By department (liabilities).
Northern Circle.		RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
Direction, Northern Circle ..	..	976 4 11	976 4 11	107 1 11	956 5 7	1,063 7 6	87 2 7	..
Ganjam	..	1,25,999 15 6	1,25,999 15 6	6,115 9 4	1,25,001 1 6	1,31,116 10 10	5,116 11 4	..
Vizagapatam	..	33,615 0 8	33,615 0 8	486 12 4	34,030 7 5	34,517 3 9	902 3 1	..
Godavari, Upper	..	69,221 3 3	69,221 3 3	787 8 0	69,331 3 3	70,118 11 3	897 8 0	..
Do. Lower	..	76,562 14 1	76,562 14 1	1,403 11 6	76,170 13 5	77,574 8 11	1,011 10 10	..
Kistna	..	38,386 13 11	38,386 13 11	341 4 6	40,150 7 11	40,491 12 5	2,104 14 6	..
Kurnool, East	..	78,467 10 2	78,467 10 2	3,290 5 8	77,979 4 4	81,269 10 0	2,801 15 10	..
Do. South	..	70,784 8 1	70,784 8 1	1,753 13 1	69,981 1 11	71,734 15 0	950 6 11	..
Do. West	..	90,598 10 11	90,598 10 11	2,616 13 11	91,385 2 2	94,002 0 1	3,403 5 2	..
Total ..	..	5,84,613 1 6	5,84,613 1 6	16,903 0 3	5,84,985 15 6	6,01,888 15 9	17,275 14 3	..
Central Circle.								
Conservator, Central Circle..	..	785 1 9	785 1 9	66 3 11	756 2 1	822 6 0	37 4 3	..
Bellary	..	43,695 0 6	43,695 0 6	511 3 9	43,634 8 0	44,145 11 9	450 11 3	..
Anantapur	..	50,697 7 7	50,697 7 7	921 6 1	50,210 3 8	51,131 9 9	434 2 2	..
Guntur	..	53,126 1 2	53,126 1 2	547 14 5	53,261 8 9	53,809 7 2	683 6 0	..
North, Cuddapah	..	63,186 1 7	63,186 1 7	896 12 6	63,879 1 3	64,775 13 9	1,589 12 2	..
South Do.	..	78,975 9 6	78,975 9 6	880 10 4	80,109 1 2	80,989 11 6	2,014 2 0	..
West Do.	..	78,282 2 5	78,282 2 5	1,338 13 1	78,289 10 11	79,628 8 0	1,346 5 7	..
Nellore	..	78,660 10 0	78,660 10 0	1,563 5 3	78,685 3 2	80,248 8 5	1,587 14 5	..
Chingleput	..	49,716 11 5	49,716 11 5	875 7 4	49,680 12 9	50,556 4 1	839 8 8	..
Chittoor	..	90,189 14 2	90,189 14 2	762 10 0	92,698 15 0	93,461 9 0	3,271 10 10	..
Total ..	..	5,87,314 12 1	5,87,314 12 1	8,364 6 8	5,91,205 2 9	5,99,569 9 5	12,254 13 4	..
Southern Circle.								
Conservator, Southern Circle.	..	1,337 11 7	1,337 11 7	72 2 10	1,279 7 10	1,351 10 8	13 15 1	..
Forest Engineer, Salem ..	..	15,245 9 5	15,245 9 5	711 6 1	15,713 2 0	16,424 8 1	1,178 14 8	..
Vellore, North	..	55,176 2 0	55,176 2 0	1,296 14 5	54,588 6 9	55,885 5 2	709 3 2	..
Do. South	..	42,205 13 5	42,205 13 5	462 1 4	42,146 5 1	42,608 6 5	402 9 0	..
Do. West	..	42,080 10 10	42,080 10 10	1,143 10 5	42,076 4 5	43,219 14 10	1,139 4 0	..
Arcot, South cum Tanjore ..	..	26,042 2 7	26,042 2 7	266 6 6	26,045 7 3	26,311 13 9	269 11 2	..
Salem, North	..	84,089 8 6	84,089 8 6	2,950 14 3	82,856 10 4	85,807 8 7	1,718 0 1	..
Do. South	..	82,553 8 1	82,553 8 1	1,910 0 6	82,745 9 8	84,655 10 2	2,102 2 1	..
Trichinopoly	..	49,142 4 0	49,142 4 0	878 13 6	49,931 14 9	50,810 12 3	1,668 8 3	..
Madura	..	126,379 13 0	1,26,379 13 0	2,802 2 7	1,25,971 7 3	1,28,773 9 10	2,393 12 10	..
Tinnevelly cum Ramnad ..	..	70,786 11 11	70,786 11 11	2,354 1 4	71,047 6 3	73,401 7 7	2,614 11 8	..
Total ..	..	5,95,039 15 4	5,95,039 15 4	14,848 9 9	5,94,402 1 7	6,09,250 11 4	14,210 12 0	..
Western Circle.								
Direction, Western Circle ..	..	14,317 10 8	14,317 10 8	74 0 7	16,109 4 4	16,183 9 11	1,865 15 3	..
The Nilgiris	..	1,21,389 0 10	1,21,389 0 10	5,450 9 1	1,20,575 15 8	1,26,026 8 9	4,637 7 11	..
Coimbatore North	..	1,18,286 11 7	1,18,286 11 7	4,090 5 5	1,17,433 2 6	1,21,523 7 11	3,286 12 4	..
Do. Central	..	1,25,695 2 1	1,25,695 2 1	2,458 10 8	1,35,626 8 7	1,38,085 3 3	12,390 1 2	..
Do. South	..	1,36,168 3 0	1,36,168 3 0	5,096 9 9	1,35,074 12 10	1,40,171 6 7	4,013 3 7	..
Kollegal	..	53,392 5 10	53,392 5 10	1,047 14 6	53,662 2 11	54,710 1 5	1,317 11 7	..
Malabar North	..	77,760 4 4	77,760 4 4	1,556 15 2 * 834 7 6	76,419 5 8	78,810 12 4	1,050 8 0	..
Do. South	..	2,31,247 0 9	2,31,247 0 9	7,591 15 9	2,37,801 6 2	2,45,393 5 11	14,146 5 2	..
Mangalore North	..	63,013 9 2	63,013 9 2	1,224 13 0	62,744 1 8	63,968 14 8	955 5 6	..
Do. South	..	1,11,733 9 11	1,11,733 9 11	3,334 12 2	1,11,424 8 9	1,14,759 4 11	3,025 11 0	..
Forest Research office.. ..	..	3,286 15 7	3,286 15 7	..	3,459 3 8	3,459 3 8	172 4 1	..
Total ..	..	10,56,280 9 9	10,56,280 9 9	32,761 1 7	10,70,339 13 9	11,03,091 15 4	46,811 5 7	..
Grand total, Presidency. ..	..	28,23,248 6 8	28,23,248 6 8	72,877 2 3	28,40,924 1 7	29,13,801 3 10	90,552 13 2	..

* Balance of Working plans Officer has been transferred to North Malabar.

ACCOUNTANT-GENERAL'S OFFICE,
MADRAS, 1st *September* 1920.

G. H. BAILEY,
Deputy Accountant-General.

ANNUAL FORM No. 82.

Forest Department, Madras Presidency.

Revenue received and outstandings on account of revenue during 1919-20.

District.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realized during year.	Balance due to the department at end of year.
Northern Circle.		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Direction	Timber and other forest produce.	..	438 0 0	438 0 0	438 0 0	..
Ganjam	Do.	5,751 9 1	1,27,329 4 6	1,33,080 13 7	1,25,711 0 0 (a) 201 4 0	7,168 9 7
Vizagapatam	Do.	32,226 2 1	41,462 3 11	73,688 6 0	54,347 0 0	19,341 6 0
Gōdāvari, Upper	Do.	11,474 14 1	63,573 11 11	75,048 10 0	72,431 0 0	2,617 10 0
Do. Lower	Do.	66,056 14 8	1,91,497 13 4	2,57,554 12 0	1,89,482 0 0	68,072 12 0
Kistna	Do.	175 3 6	78,500 1 0	78,675 4 6	69,852 0 0	8,823 4 6
Kurnool, East	Do.	346 10 2	1,06,350 5 10	1,06,697 0 0	1,04,882 0 0 (a) 1,815 0 0	..
Do. South	Do.	1,684 3 0 (b)— 193 5 4	1,18,238 6 8	1,19,729 4 4	1,03,455 0 0	16,274 4 4
Do. West	Do.	533 0 0	2,36,400 12 0	2,36,933 12 0	2,21,097 0 0	15,836 12 0
	Total ..	1,18,248 8 7 (b)— 193 5 4	9,63,790 11 2	10,81,845 14 5	9,41,695 0 0 (a) 2,016 4 0	(a) 1,38,134 10 5
Central Circle.	Timber, and other forest produce.					..
Direction		..	28,821 12 0	28,821 12 0	28,821 12 0	
Bellary	Do.	1,24,308 0 0	1,19,709 4 1	2,44,017 4 1	2,12,028 10 8 (a) 15,514 8 0 (b) 242 0 0	16,232 1 5
Anantapur	Do.	2,94,877 10 0	1,22,378 11 2	4,17,256 5 2	3,45,390 14 0 (a) 43,234 14 11	28,630 8 3
Guntūr	Do.	18,608 13 4	1,65,623 3 5	1,84,232 0 9	1,75,350 9 10	8,881 6 11
Cuddapah, North	Do.	3,275 0 0	52,689 1 4	55,964 1 4	48,867 3 4 (b) 145 0 0	6,951 14 0
Do. South	Do.	22,015 7 10	43,015 1 9	65,030 9 7	50,954 9 1 (b) 17 0 0	14,059 0 6
Do. West	Do.	32,214 7 9	72,108 10 3	1,04,323 2 0	95,042 3 6	9,280 14 6
Nellore	Do.	90,223 7 6	2,47,941 3 4	3,38,164 10 10	2,61,136 11 5 (a) 528 15 0 (b) 114 0 0	76,385 0 5
Chingleput	Do.	17,628 12 0	58,006 11 4	75,635 7 4	59,701 8 8	15,933 14 8
Chittoor	Do.	19,917 13 4	1,79,729 3 6	1,99,647 0 10	1,46,653 1 8 (b) 10 8 0	52,983 7 2
	Total ..	6,23,069 7 9	10,90,022 14 2	17,13,092 5 11	14,23,947 4 2 59,806 13 11 =14,83,754 2 1	2,29,338 3 10
Southern Circle.						
Direction	Timber and other forest produce.	..	3,64,765 0 0	3,64,765 0 0	3,64,765 0 0	..
Vellore, North	Do.	35,375 11 5	1,11,299 11 4	1,46,675 6 9	1,33,361 0 0	13,314 6 9
Do. South	Do.	1,18,704 14 4	77,726 9 8	1,96,431 8 0	1,30,140 0 0	66,291 8 0
Do. West	Do.	19,941 9 5	84,083 15 7	1,04,025 9 0	97,394 0 0	6,631 9 0
Arcot, South	Do.	19,273 1 6	1,15,987 7 1	1,35,260 8 7	1,28,661 0 0	6,599 8 7
Salem, North	Do.	57,286 3 11	1,15,530 0 2	1,72,816 4 1	1,46,861 0 0	25,955 4 1
Do. South	Do.	27,217 6 4	1,41,747 1 1	1,68,964 7 5	1,20,482 0 0	48,482 7 5
Trichinopoly	Do.	39,149 13 9	1,05,226 10 3	1,44,376 8 0	1,10,231 0 0	34,145 8 0
Madura	Do.	87,132 10 3	1,76,083 15 10	2,63,216 10 1	1,81,852 0 0	81,364 10 1
Tinnevelly	Do.	19,227 15 0	2,47,632 15 4	2,66,860 14 4	1,84,559 0 0	82,301 14 4
Forest Engineer	Do.	..	28 0 0	28 0 0	28 0 0	..
	Total ..	4,23,309 5 11	15,40,111 6 4	19,63,420 12 3	15,98,334 0 0	* 3,65,086 12 3
Western Circle.						
Direction	Timber and other forest produce.	..	89 0 0	89 0 0	89 0 0	..
Mangalore, North	Do.	14,314 8 6	1,21,784 8 0	1,36,099 0 6	1,19,484 0 0	16,615 0 6
Do. South	Do.	9,660 9 5	87,631 0 5	97,291 9 10	89,037 0 0	8,254 9 10
Malabar, North	Do.	25,830 2 7	1,00,990 1 7	1,26,820 4 2	81,191 0 0	45,629 4 2
Do. South	Do.	1,48,507 0 0	6,32,429 5 6	7,75,936 5 6	6,95,376 0 0	80,560 5 6
The Nilgiris	Do.	23,599 5 5	1,29,177 4 5	1,52,776 9 10	1,33,855 0 0 * 218 3 4	18,703 6 6
Kollegal	Do.	16,054 10 0	1,12,073 6 0	1,28,128 0 0	1,14,113 0 0	14,015 0 0
Coimbatore, North	Do.	30,428 8 11	4,07,270 5 4	4,37,698 14 3	4,11,724 0 0	25,974 14 3
Do. Central	Do.	52,744 15 9	1,59,120 3 2	2,11,865 2 11	1,53,714 0 0	58,151 2 11
Do. South	Do.	19,604 3 6	2,21,827 14 2	2,41,432 1 8	1,91,147 0 0	50,285 1 8
	Total ..	3,35,744 0 1	19,72,393 0 7	23,08,137 0 8	19,89,730 0 0 * 218 3 4	3,18,188 13 4
Grand total, Presidency ..		15,00,178 1 0	55,66,318 0 3	70,66,496 1 3	60,15,747 9 5	10,50,748 7 16

Note for Northern Circle. (a) Written off the accounts.
(b) Eliminated on account of erroneous demand.
(c) Out of the total outstandings of Rs. 1,38,134-10-5, the amount actually due on or before 30th June 1920 was Rs. 45,828-11-11

Note for Central Circle. (a) Rebate paid, deducted from the lease amounts of Tangedu bark leases.
(b) Written off as irrecoverable.

* Written off the accounts.

NOTE.—Out of the total outstandings of Rs. 3,18,188-13-4, the amount actually due on or before 30th June 1920 was Rs. 1,25,900-

Annual Form No. 83.

Forest Department, Madras Presidency.

Financial results of the year 1919-20.

District.	Timber and other produce removed from the forests by Government Agency.		Other revenue.		Formation, protection and improvement of forests.	Total.	
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.
Northern Circle.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Ganjām	70,232	47,040	55,527	58,313	42,612	1,25,759	1,47,965
Vizagapatam	1,914	3,847	52,441	33,085	8,654	54,355	45,086
Gōdāvari, Upper ..	45,638	25,262	26,838	26,534	27,386	72,476	79,182
Do. Lower ..	1,158	12,037	1,88,362	73,663	18,262	1,89,520	1,03,962
Kistna	146	2,720	69,718	32,795	16,479	69,864	51,994
Kurnool, East ..	15,057	15,913	89,849	44,306	26,520	1,04,906	86,739
Do. South ..	1,369	1,213	1,02,116	54,163	25,746	1,03,485	81,122
Do. West ..	27,066	22,114	1,94,264	84,728	16,050	2,21,330	1,22,892
Total ..	1,62,580	1,29,646	7,79,115	4,07,587	1,81,709	9,41,695	7,18,942 (*a*) 10,040
Central Circle.							
Bellary	823	15	2,13,906	40,866	18,969	2,14,729	59,850
Anantapur	1,008	83	3,48,434	50,648	23,010	3,49,442	73,741
Guntūr	728	83	1,77,322	52,231	23,091	1,78,050	75,405
Cuddapah, North ..	678	2,317	50,888	45,651	24,922	51,566	72,890
Do. South ..	2,191	39	51,465	62,644	35,988	53,656	98,671
Do. West ..	1,101	2,848	97,991	50,675	35,353	99,092	88,876
Nellore	44,333	4,762	2,20,853	66,363	32,264	2,65,186	1,03,389
Chingleput	732	19	60,994	39,454	28,692	61,726	68,165
Chittoor	1,323	1,881	1,49,381	72,063	36,967	1,50,704	1,10,911
Total ..	52,917	12,047	13,71,234	4,80,595	2,59,256	14,24,151	7,51,898 (*a*) 3,040
Southern Circle.							
Vellore, North ..	5,237	1,241	1,28,127	37,274	23,751	1,33,364	62,266
Do. South ..	1,06,035	6,274	1,20,425	35,608	1,28,588	2,26,460	1,70,470
Do. West ..	1,15,435	5,740	67,014	38,285	18,820	1,82,449	62,845
South Arcot	148	1,340	1,28,513	36,737	7,176	1,28,661	45,253
Salem, North	89,381	10,478	1,45,984	58,631	44,379	2,35,365	1,13,488
Do. South	62,849	18,403	1,19,593	53,963	26,434	1,82,442	98,800
Trichinopoly	29,438	3,840	1,09,268	39,113	12,618	1,38,706	55,571
Madura	401	1,051	1, 1,451	55,948	61,981	1,81,852	1,18,980
Tinnevelly	4,990	1,874	1,84,045	52,872	25,595	1,89,035	80,341
Total ..	4,13,914	50,241	11,84,420	4,08,431	3,49,342	15,98,334	8,08,014 (*a*) + 21,612
Western Circle.							
Mangalore, North ..	54,477	21,524	65,017	37,023	10,804	1,19,494	69,351
Do. South ..	54,211	73,113	34,836	25,161	23,484	89,047	1,21,758
Malabar, North ..	61,000	52,616	20,201	17,212	29,340	81,201	99,168
Do. South ..	6,81,191	2,21,763	14,195	8,540	51,739	6,95,386	2,82,042
The Nilgiris	1,01,538	1,15,788	32,327	21,389	33,070	1,33,865	1,70,247
Kollegal	54,057	7,274	60,066	35,163	24,267	1,14,123	66,704
Coimbatore, North ..	2,76,009	25,325	1,35,725	50,817	47,369	4,11,734	1,23,511
Do. Central ..	3,893	36,401	1,49,831	46,146	56,691	1,53,724	1,39,138
Do. South ..	75,548	98,486	1,15,608	48,885	36,808	1,91,156	1,84,179
Total ..	13,61,924	6,52,290	6,27,806	2,90,336	3,13,472	19,89,730	* 12,56,098
Grand total, Presidency.	19,91,335	8,44,224	39,62,575	15,86,949	11,03,779	59,53,910	35,69,644

(*a*) Refunds and drawbacks.. * Includes refunds and drawbacks.

Annual Form No. 84.

Part I.

Forest Department, Madras Presidency.

Statement of elephants and other live-stock during 1919–20.

District.	On hand at the commencement of the year.		Number received during the year.	Number disposed of during the year.	On hand at the end of the year.		Total expenditure on maintenance during the year.
	Number.	Value.			Number.	Value.	
(1) Elephants.							
Northern Circle.		Rs.				Rs.	Rs. A. P.
Ganjām	2	2,700	..	2	..	..	1,988 6 0
Godāvari, Upper	2	3,700	..	.	2	3,700	2,111 8 4
Kurnool, West	2	5,500	..	..	2	5,000	1,717 15 11
Total ..	6	11,900	..	2	4	8,700	5,817 14 3
Central Circle—Nil.							
Southern Circle—Nil.							
Western Circle.							
Mangalore, South	6	20,000	7	1	12	26,500	8,886 0 11
Malabar, North	29	61,600	6	17	18	58,000	16,129 9 2
Do. South	38	1,32,700	1	18	21	80,200	36,524 0 0
The Nilgiris	27	71,700	31	7	51	1,20,100	‡ 30,051 0 7
Coimbatore, South	24	77,300	6	8	22	75,000	22,674 0 7
Total ..	124	3,63,300	51	51	124	3,59,800	1,14,264 11 3
Grand total (Elephants), Presidency.	130	3,75,200	51	53	128	3,68,500	1,20,682 9 6
(2) Other live-stock.							
Northern Circle.							
Ganjām	6	230	6	6	6	355	* 105 0 0
Kurnool, East	2	24	2	..	4	34	..
Do. West	16	800	1	8	9	500	1,847 12 3
Total ..	24	1,054	9	14	19	889	1,952 12 3
Central Circle.							
Chingleput	..	..	1	..	1	35	3 0 0
Chittoor	2	77	..	..	2	70	..
Total ..	2	77	1	..	† 3	105	3 0 0
Southern Circle—Nil.							
Western Circle.							
Mangalore, South	..	..	12	..	12	1,015	170 4 5
Malabar, South	46	2,129	105	44	107	8,017	11,483 0 0
The Nilgiris	5	372	5	..	10	1,042	..
Coimbatore, Central ..	...	..	20	..	20	1,200	1,921 11 5
Do. South	104	7,061	10	47	67	4,590	14,848 7 1
Total ..	155	9,562	152	91	216	15,864	28,423 6 11
Grand total (Other Live-stock), Presidency.	181	10,693	162	105	238	16,858	30,379 3 2

* Debited to A-I (*a*).

† Buffaloes.

‡ Includes also the expenditure on mainnance of bullocks.

PART II.

Statement of elephants gone off the list during the year 1919-20.

District.	Names.	When purchased or otherwise obtained by Government.	Age.	How disposed of.
		Northern Circle.		
Ganjam ..	Begum	Purchased in the year 1911	YRS. 23	Sent to the Forest Nursery on the Nilgiris.
	Nagendramala ..		17	
		Central Circle—Nil.		
		Southern Circle—Nil.		
		Western Circle.		
Mangalore, South.	1 Ostend ..	Captured on 13th October 1918	7	Died in March 1920.
Malabar, North.	1. Meena ..	Do. 10th January 1919	4	Transferred to the Nursery in the Nilgiris during February 1920.
	2. Nagi	Do. do.	2	
	3. Kali	Captured on 12th January 1919	21	
	4. Arjuna ..	Do. do.	4	
	5. Ranganayaki ..	Do. 8th February 1919	3	
	6. Ja'afar ..	Do. do.	3	
	7. Khalid	Do. do.	6	
	8. Siva	Do. 3rd March 1919	11	
	9. Madhavi ..	Do. 16th March 1919	26	
	10. Sivaji	Do. 30th March 1919	16	
	11. Irene	Do. 1st April 1919	7	
	12. Pertab Singh ..	Do. 30th April 1919	6	
	13. Balakrishna ..	Born on 27th January 1918	1	Died on 31st August 1919.
	14. Devi	Captured on 20th February 1919	26	Do. 20th Sep. 1919.
	15. Chandy ..	Do. 30th March 1919	11	Do. 14th Dec. 1919.
	16. Lloyd	Do. 3rd April 1919	17	Do. 10th June 1920.
	17. Tara Bai ..	Stranded calf; brought down by the Kurichiars of the Chikkeri hills on 6th December 1919.	1 month	Do.
Malabar, South.	1. Maharajan ..	Captured in April 1886	44	Transferred to The Nilgiris in Nov. 1919.
	2. Droupadi ..	Do. 11th April 1914	35	
	3. Subhadar ..	Do. 21st January 1919	8	Do.
	4. Padukay ..	Do. do.	6	
	5. Dehra	Do. do.	4	
	6. Ranger ..	Do. 17th March 1906	24	Retransferred to North Malabar in Oct. 1919.
	7. Countess ..	Do. 5th June 1910	27	
	8. Netravathi ..	Do. 21st February 1905	22	
	9. Rolly	Do. 17th April 1916	17	Retransferred to The Nilgiris in Feb. 1920.
	10. Krishna ..	Do. 30th March 1916	18	
	11. Madhava ..	Do. 12th March 1906	16	
	12. Hector ..	Do. 13th April 1906 .. .	20	
	13. Shanker ..	Do. 21st May 1907	17	
	14. Cæsar	Do. 12th February 1910	16	
	15. Padmini ..	Do. 10th February 1896	50	
	16. Kamakshi ..	Do. 11th April 1914	23	
	17. Kerala	Do. 3rd March 1919	20	Died on 28th July 1919.
	18. Nagendramale.	Received from Ganjam in March 1920 ..	..	Do. 30th April. 1920.
The Nilgiris.	1. Meena	Captured on 10th January 1919	4	Do. 24th Feb. 1920.
	2. Arjuna ..	Do. 12th January 1919	4	Do.
	3. Ja'afar ..	Do. 9th February 1919	3	Do. 12th Feb. 1920.
	4. Hector	Do. 13th April 1906	20	Do. 5th May 1920.
	5. Fatima ..	Do. 29th January 1920	2	Do. 16th May 1920.
	6. Dehra	Do. 24th January 1919	5	Do. 26th Feb. 1920.
	7. Yuvaraj ..	Do. 18th January 1918	2	Do. do.
Coimbatore, South.	1. Dowlat ..	Captured on 13th April 1919	40	Do. 2nd Sep. 1919.
	2. Parvathi ..	Do. 24th July 1919	2	Shot by the District Forest Officer on 22nd August 1919.
	3. Begum	Do. 15th August 1919	3½	Died on 18th Aug. 1919.
	4. Gopalan ..	Do. 21st November 1919	5½	Do. 9th Jan. 1920.
	5. Moti	Do. 5th June 1919	26	Do. 4th Jan. 1920.
	6. Albiz	Do. 13th April 1919	7	Do. 18th March 1920.
	7. Kunju ..	Do. 17th March 1897	28	Do. 10th May 1920.
	8. Gulabi ..	Do. 12th September 1919	9	Do. 25th June 1920.

Annual Form No. 85.

Forest Department, Madras Presidency.

Abstract showing the value of stores, tools and plant for 1919–20.

District.	Buildings.				Stores.				Totals.				Difference in value.	
	On hand at the commencement of the year.		On hand at the end of the year.		On hand at the commencement of the year.		On hand at the end of the year.		On hand at the commencement of the year.		On hand at the end of the year.			
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	In favour of the year.	Against the year.
Northern Circle.		Rs.		Rs.		Rs.		Rs.		Rs.		Rs.	Rs.	Rs.
Direction ..	1	1,430	1	400	386	2,303	394	4,543	387	3,733	395	4,943	1,210	..
Ganjam ..	108	47,650	119	43,082	3,833	7,572	3,829	6,959	3,941	55,222	3,948	50,041	..	5,181
Vizagapatam ..	73	9,647	63	10,755	1,529	4,347	1,489	4,153	1,602	13,994	1,552	14,908	914	..
Godavari, Upper.	126	26,709	127	29,263	3,558	15,471	3,544	12,471	3,684	42,180	3,671	41,734	..	446
Godavari, Lower.	*153	*42,740	149	43,073	* 2,258	* 4,590	2,270	4,240	2,411	47,330	2,419	47,313	..	17
Kistna ..	36	4,767	36	4,772	1,483	10,201	1,537	10,155	1,519	14,968	1,573	14,927	..	41
Kurnool, East.	60	46,620	98	62,557	2,935	6,541	4,381	9,334	2,995	53,161	4,479	72,391	19,230	..
Do. South.	67	47,762	70	48,923	2,937	6,718	2,876	7,384	3,004	54,480	2,946	56,307	1,827	..
Do. West.	113	84,743	82	63,855	8,438	11,155	4,909	19,526	8,551	95,898	4,991	83,381	..	12,517
Total ..	737	3,12,068	745	3,06,680	27,357	68,898	25,229	79,265	28,094	80,966	25,974	3,85,945	4,979	..
Central Circle.														
Direction ..	..	..	..	..	345	2,256	363	2,473	345	2,256	363	2,473	217	..
Bellary ..	48	51,219	40	46,719	2,994	12,866	2,473	11,181	3,042	64,085	2,513	57,900	..	6,185
Anantapur ..	34	51,953	34	47,746	2,962	5,476	2,959	5,874	2,996	57,429	2,993	53,620	..	3,809
Guntur ..	28	11,247	28	10,434	2,900	5,713	3,105	7,098	2,928	16,960	3,133	17,532	572	..
Cuddapah, North.	49	21,255	47	22,257	1,624	3,972	1,560	3,705	1,673	25,227	1,607	25,962	735	..
Cuddapah, South.	48	22,380	51	31,884	872	5,722	1,494	6,496	920	28,102	1,545	38,380	10,278	..
Cuddapah, West.	36	5,670	41	14,049	2,018	6,895	1,983	5,583	2,054	12,565	2,024	19,632	7,067	..
Nellore ..	57	34,448	58	36,556	56,326	35,345	52,538	41,561	56,383	69,793	52,596	78,117	8,324	..
Chingleput ..	24	9,526	24	9,202	2,760	3,463	2,331	4,017	2,784	12,989	2,355	13,219	230	..
Chittoor ..	43	23,084	41	24,998	3,491	8,658	3,520	10,880	3,534	31,742	3,561	35,878	4,136	..
Vernacular Training School.	..	..	..	..	695	1,253	671	1,220	695	1,253	671	1,220	..	33
Total ..	367	2,30,782	364	2,43,845	76,987	91,619	72,997	100,088	77,354	*3,22,401	73,361	3,43,933	31,559	10,027
Southern Circle.														
Direction ..	..	..	..	..	205	1,639	220	1,707	205	1,639	220	1,707	68	..
Vellore, North.	37	21,833	38	24,723	1,472	4,330	1,336	3,928	1,509	26,163	1,374	28,651	2,488	..
Do. South.	41	32,352	40	26,027	2,046	5,206	2,031	4,869	2,087	37,558	2,071	30,896	..	6,662
Do. West.	19	15,752	30	25,457	2,283	6,448	2,389	5,909	2,302	22,200	2,419	31,366	9,166	..
South Arcot ..	31	22,446	30	21,024	1,633	3,283	1,612	5,717	1,664	25,729	1,642	26,741	1,012	..
Salem, North..	116	61,094	116	61,100	3,022	9,745	3,258	8,536	3,138	70,840	3,374	69,636	..	1,204
Do. South..	56	34,162	62	46,253	3,038	7,221	3,130	10,139	3,094	41,383	3,192	56,392	1 0 09	..
Trichinopoly ..	39	22,466	39	20,922	3,167	8,850	4,421	8,793	3,206	31,316	4,460	29,715	..	1,601
Madura ..	113	95,517	122	1,02,986	3,225	6,217	3,229	6,387	3,338	1,01,734	3,351	1,09,373	7,639	..
Tinnevelly ..	110	† 53,427	112	52,673	1,787	3,728	1,745	4,138	1,897	57,155	1,857	56,811	..	344
Working Plans Officer.	..	..	..	..	257	1,593	257	1,593	257	1,593	257	1,593	..	..
Vernacular Training School.	..	..	..	..	907	2,146	878	1,911	907	2,146	878	1,911	..	235
Total ..	562	3,59,049	589	3,81,165	23,042	60,407	24,506	63,627	23,604	4,19,456	25,095	4,44,792	25,33[illegible]	..
Western Circle.														
Direction ..	1	60	1	57	401	4,701	408	4,600	402	4,761	409	4,657	..	104
Mangalore, North.	42	25,930	49	27,865	944	4,249	749	4,739	986	30,179	798	32,604	2,425	..
Do. South.	26	14,433	30	20,792	1,171	3,957	833	4,562	1,197	18,390	863	25,354	6,964	..
Malabar, North	83	47,987	85	51,822	2,935	4,457	2,388	3,812	3,018	52,444	2,473	55,634	3,190	..
Do. South.	55	40,397	55	38,733	1,803	6,090	3,030	13,339	1,858	46,487	3,085	52,072	5,585	..
The Nilgiris ..	73	42,658	75	40,631	2,300	10,457	2,414	9,647	2,373	53,115	2,489	50,278	..	2,837
Kollegal ..	33	16,130	34	17,419	21,175	5,579	20,345	5,612	21,208	21,709	20,379	23,031	1,322	..
Coimbatore, North.	75	88,129	78	1,04,725	3,186	9,563	2,475	11,180	3,261	97,692	2,553	1,15,905	18,213	..
Do. Central	68	23,457	53	24,562	1,702	7,477	2,139	22,499	1,770	30,934	2,192	47,061	16,127	..
Do. South.	72	40,467	66	49,312	24,119	21,064	25,470	50,255	24,191	61,531	25,536	99,567	38,036	..
Vernacular Training School.	..	..	..	..	459	2,124	325	1,410	459	2,124	325	1,410	..	714
Working Plans Office.	..	..	..	..	79	1,461	79	1,461	79	1,461	79	1,461	..	..
Forest Engineer.	..	..	..	..	436	..	..	..	436	..	..	..	..	..
Total ..	528	3,39,648	526	3,75,918	60,710	81,179	60,655	1,33,116	61,238	4,20,827	61,181	5,09,034	88,207	..
Grand total, Presidency.	2,694	10,33,842	2,224	13,07,600	188,096	3,02,103	183,386	3,76,096	190,290	5,15,978	185,611	16,83,704	1,40,554	..

* Difference between the closing balance of 1918–19 and the present opening balance is due to the adoption of correct figures furnished by the District Forest officer.

Revised figure furnished by the District Forest Officer.

Government of Madras

DEVELOPMENT DEPARTMENT

G.O. No. 259, 15th February 1921

Forest Administration Report

Reviewing the — for the year 1919–20.

READ—the following paper :—

The Hon'ble Mr. S. Cox,
Chief Conservator of Forests.

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Letter—from the Hon'ble Mr. S. Cox, Chief Conservator of Forests.
To—the Secretary to Government, Revenue (Special) Department.
Dated—Madras, the 16th November 1920.
No.—95.

I have the honour to submit the progress report of forest administration in the Madras Presidency for the year ending 30th June 1920.

The report is in a somewhat different form from that of previous years. Instead of consolidating the Conservators' reports into a single Presidency report by the aid of scissors and paste, each Conservator's report has been printed separately, as is the practice in other provinces in India. The Conservators are thereby able to present the facts connected with their circles as a whole and I venture to think, considering how widely the problems in the different circles differ, that a clearer view of the administration is obtained. Some attention has also been paid to eliminating unnecessary matter.

2. In the following remarks I have briefly reviewed the more important facts of the administration as a whole.

CONSTITUTION OF STATE FORESTS.

Alteration in area.

3. The area of reserved forest increased from 18,712 square miles to 18,794 square miles and that of reserved land, owing to the operation of forest settlement, decreased from 682 square miles to 565 square miles during the year, leaving the department in charge of a total area of 19,359 square miles of forest.

About 36,000 acres of reserved forest were disafforested during the year, chiefly for cultivation purposes.

Forest settlement.

4. One hundred and forty square miles of forest were finally settled under the Forest Act, of which 96 square miles were situated in the *Upper Gōdāvari* division and 38 square miles in the Attur taluk of the *Salem* district. The settlement of a further area of 93 square miles was taken up during the year but not completed; it referred chiefly to the recently acquired Mudumalai forests in the Nilgiri-Wynad (75 square miles) and to certain hill forests in Salem.

There still remains the large area of 250 square miles of forest to be finally settled in the Nugur taluk of the Bhadrachalam Agency.

Demarcation.

5. The total forest boundaries in the Presidency reached the considerable length of 34,700 miles, of which all but 2,000 miles have been artificially demarcated.

There is still much correction of boundary to be carried out in certain districts, notably *Chittoor* and *Guntūr*, and several hundred miles of boundary, especially in the Western Circle, remain to be permanently demarcated.

Survey.

6. The Survey of India Department confined its forest operations to a survey of 3 square miles of reserved forest in the *Tinnevelly* district. The Madras Revenue Survey Department completed the survey of 14 forests in the *Trichinopoly* district which had been ear-marked for disafforestation and transfer to the Revenue Department.

MANAGEMENT.

Working plans.

7. Owing to want of officers it is impossible to take up the question of working plans with any seriousness. Nothing less than a trained working-plan party working under an experienced officer in each circle could hope to cope with the arrears of work. Almost every working plan in the Presidency is in need of revision and many require to be recast altogether. For the present we have to be content with the preparation of simple schemes where no working plans exist and with the temporary revision of such as are already in operation. A great deal of work of this kind has been carried out during the year as the Conservators' reports testify, and many District Forest Officers have worked very hard to supply the existing deficiencies.

Mr. Bourne's elaborate working plan for the Nilambur plantations and Mr. Minchin's important working plan for the forests of Goomsur remain unpublished, though the field work has long since been done, owing to the difficulty of getting the plans, grafts, and diagrams prepared and printed at the Forest Survey Institute at Dehra Dun. The forest work there has been disorganized by the war on the frontier.

WORKS.

Roads and communications.

8. As remarked by the Conservator, Northern Circle, the year, owing to financial stringency, was one of consideration and reconnaisance rather than of execution; and, apart from projects such as that of the opening up of the Javadi Hills and the exploitation of the Chenat Nayar forests, most of the work carried out was designed to facilitate transport of produce from timber and fuel coupes. On this account about 200 miles of road and cart-track were constructed at a cost of Rs. 40,000 and about Rs. 60,000 were spent on the repairs of 1,500 miles of road in use.

Of larger schemes of opening up the forests with communications, there was much discussion and inquiry which will bear fruit when financial considerations permit.

In Goomsur in connexion with the Russellkonda saw mill it is evident that increased facilities of transport must be provided, not only in the form of drag-paths and forest roads for the extraction of timber within the forest but of improved road surfaces for the carting of timber to the mill. In the *Upper Gōdāvari* division the question of forest communications was re-considered and certain schemes were agreed to; but it is now probable that the whole question will have to be dealt with again in connexion with the development of the Agency in general. The crying need there is direct access to the Bhadrachalam taluk by road on the north side of the Gōdāvari river.

In the *Kurnool* district a scheme of transport by road and canal to bring fuel from the Nallamalai terai to the town of Kurnool was carefully examined, but turned down as financially unsound; but other schemes were examined which had, as their main object, increased facilities of transport to the railway from the same locality, and of inspection and control. A five-year programme of work drawn up by the District officers and approved of by the Collector and Conservator has since been sanctioned.

In the *North Arcot* district the construction of the Amerdi-Nadanur ghat road and of the Kommatiyeri-Patrakad road was carried on by the Forest Engineer at a cost of Rs. 53,832 and Rs. 34,330 respectively. Proposals were made to Government during the year to curtail the scope of the general scheme of opening up the Javadi Hills; partly on the ground that the expenditure of Rs. 13 lakhs on the scheme was not justified from a forest point of view, and partly because the Forest Engineer would be more usefully employed on important forest works connected with the extraction of timber. The matter was under the consideration of Government at the close of the year.

The forest tramway for the transport of fuel from the Sriharikota forests to the Buckingham canal was relaid for a distance of 4 miles. That at Mount Stuart continued to be utilized for the transport of all timber from the Tekkadi forests; but was in very bad order and, for want of labour, little could be done to improve it. The clearing and improvement of the track has since been taken in hand by Mr. Scot; but in places realignment appears to be essential.

Buildings.

9. As in the case of roads, expenditure was curtailed and only urgent works or works already in progress were carried out. A few inspection bungalows, rangers' offices and quarters and subordinates' lines were built in various parts of the Presidency. The cost both of construction and of repair is reported to have been extremely high and many estimates had to be revised before the works could be completed.

Other works.

10. About Rs. 10,000 were spent during the year on improving the water-supply within the forest for the benefit of cattle, and also on anti-malarial measures including the sinking of wells near forest stations. The supply of permanent water for cattle in the forest has proved a difficult matter and most of the money spent has been more or less wasted. Unless large sums are spent, the supply dries up at the time when it is most wanted.

Expenditure on anti-malarial measures is likely rapidly to extend. The health of many forest stations is notoriously bad and the causes of it are often more or less avoidable. The chief requisite of health is pure water and the removal of mosquito-breeding pools. The visit of the Hon'ble Surgeon-General G. G. Giffard, C.S.I., to Mount Stuart where anti-malarial measures were closely studied, and his subsequent lecture to a large body of Forest officers at Coimbatore has done much to rouse the interest of the department in the subject.

Much was hoped for from the visit of a water-diviner to Mount Stuart and to the Mudumalai forests, where the water-supply presents particular difficulty in the hot weather. So far as experience goes at present, his visit has not been attended by success but it is still possible that water may be found in solid rock at somewhat lower depths than he indicated. Speculative sinking of wells in rocky soil has been the cause of so much waste of money, that the question is of great importance to the department.

LIVE-STOCK

Staff.

11. Mr. F. X. Mascarenhas, who has long held the post of Special Veterinary Officer, was promoted to the newly created post of Inspector of Live-stock, in which his knowledge of elephants and cattle can be utilized in a wider sphere. An additional Veterinary officer was appointed to take up Mr. Mascarenhas' work in *Malabar* and *Kanara*.

Elephants.

12. The total number of elephants in charge of the department at the end of the year was 130 valued at Rs. 3,68,500, although their sale value is probably much higher.

Capturing operations were very unsuccessful, only eleven elephants being added to the list. The failure was particularly noticeable in the Wynaad where only two elephants were caught compared to eighteen in the previous year.

If kumaki elephants could be spared from timber operations, it would be desirable to start operations where elephants have in recent years been increasing in number, for instance in the *Madura* forests and on the Moyar and North-eastern Nilgiri slopes. Such action will become possible when motor traction is employed on a larger scale.

The mortality among elephants—no less than 23 animals died—was unfortunately high and the causes of death which were often obscure are under investigation in collaboration with the Veterinary Department.

Cattle.

13. There was a considerable mortality also of cattle in some of the forest camps, the cause of which is under investigation. Some fine buffaloes from the districts round Dharwar were purchased and added to the stock which stood at 238 animals with a book value of Rs. 16,858 at the close of the year.

FOREST CONSERVANCY.

General protection.

14. Mr. Bennett draws particular attention to the high figure of forest offences in the *Guntūr* district and to want of conservancy in parts of the *Chittoor* district. In the former case no less than 2,434 cases were reported during the year. Conservancy in the *Guntūr* district is particularly difficult. The number of cattle which

the villagers wish to graze in the forest is far in excess of the forest possibility, the forests are miserably poor, and the long-standing custom of lopping for fodder the Hardwickia—the one valuable tree of these dry upland forests—is very difficult to deal with. The remedies proposed by the Conservator were under consideration at the close of the year.

Mr. Hodgson declares forest protection to be deplorably bad in *Kurnool* and in parts of *Ganjām*, while fair in other parts of the Circle.

In *Kurnool* the difficulties of protection have always been great, and, of late years, have been especially so, for reasons explained by the Conservator. It is to be hoped that the special measures now being taken to control the Chenchus and the improvement of communications will result in some improvement.

The Conservators of the Western and Southern Circles consider that the recent reorganization of the protective staff has already proved effective in improving conservancy; and the latter considers that while for the present some increase in the number of cases reported is inevitable, in time the effect of the increased strength of the establishment must be to reduce the number of offences. That is and must always be the chief aim of the department.

Breaches of the Forest Act.

15. The following table shows the forest offences of all kinds reported and disposed of during the year :—

—	Injury to forests by fire.		Unauthorized felling.		Unauthorized grazing.		Other offences.		Total.		Average of three years ending 1918-19.
	1918-19.	1919-20.	1918-19.	1919-20.	1918-19.	1919-20.	1918-19.	1919-20.	1918-19.	1919-20.	
Cases taken to court ..	37	34	4,666	4,187	2,010	1,829	375	336	7,088	6,386	6,617
,, recommended for composition.	68	47	11,776	12,941	5,081	5,528	800	908	17,725	19,424	18,756
,, undetected ..	924	1,214	328	342	78	154	17	17	1,347	1,727	1,740
Total ..	1,029	1,295	16,770	17,470	7,169	7,511	1,192	1,261	26,160	27,537	27,113

The total number of cases reported, viz., 27,537 is somewhat greater than in the previous year but allowing for the recent increase in the protective establishment, there is evidence that forest crime is decreasing, as suggested in last year's report.

The number of acquittals appears high but the figure of 2,084 includes cases in which the District Forest Officers decided to take no action. The figures with regard to undetected cases are also misleading. The 1,727 cases so described are only those in which special reports have been made and the number forms no criterion of the number of petty offences which are known to occur but are not reported. The record shows, however, how difficult it is to deal with fire. Nine-tenths of the undetected and reported cases refer to that alone.

The punishments awarded by the magistracy appears to have been adequate in most cases, though action was called for by the District Magistrates in one or two cases.

Magisterial punishments for forest offences are usually very light, but even so, the great majority of cases, in fact about 70 per cent, are decided out of court. During the year the average compounding fee paid in 16,577 cases actually compounded amounted to Rs. 12-5-10.

The introduction of new rules was under consideration during the year, following a resolution in the Legislative Council proposed by the Hon'ble Khan Sahib Haji Abd-ul-lah Haji Qasim Sahib and accepted by Government, under which an opportunity was to be given to accused in forest cases to pay the compounding fees into court, provided they also paid the expenses of the prosecution. It remains to be seen to what extent this experiment, when applied, will benefit the people without unduly hampering the work of the department.

Fire protection.

16. The year was characterised by severe forest fires. Over 500,000 acres of specially protected forest were reported to be burnt and allowing for difficulty of computing the area and the inclination of rangers to minimise the damage, it is probable that not less than 1,000 square miles of forest were affected. It is difficult to realize the enormous damage which annual fires of these dimensions cause to State forests. The specially protected forests are the main sources of timber in the Presidency and year by year a large proportion of them is overrun by fire.

During the last five years out of an average area of 6,250 square miles of forest under special protection at least 4,000 square miles have been burnt. Improvement of the forest in such circumstances is impossible; deterioration is inevitable. The whole problem is one of the greatest difficulty and magnitude and it serves no purpose to hide the facts.

The great hill blocks in the dry Deccan districts are those most affected partly because they are difficult of access and fires once started cannot be controlled, and partly because being dry timber forests and not fuel forests, there is often a dense growth of grass which increases year by year, as the forest thins out under fire.

The fires reported in the *Cuddapah* and *Kurnool* districts alone covered an area of 377,848 acres or 590 square miles and occurred in a country already addicted to scarcity and famine, due in large degree to the forest denudation of its hills.

In *Kurnool* Mr Hodgson initiated as a last resource the scheme of early burning by departmental agency and this practice will be extended still further next year. It imposes a great strain on the staff and steps will have to be taken to provide additional help in the burning season. It is hoped thereby that the effects of fire may be minimised and the comparatively small area of high forest left in the centre of the Nallamalais may be saved from destruction.

In *Cuddapah* where the difficulties are equally great a conference was held of the District Revenue and Forest officers which the Collector, Conservator and Chief Conservator attended and at which villagers from the neighbourhood of the Seshachellam and Velligonda Hills were present. Ventilation of the subject of damage done by fire was the object of the conference and it was hoped that the co-operation of the Revenue department with the Forest department would impress the villager. Judging from the record of fire since the conference was held, its results have been inappreciable. The Conservator and the Divisional Forest Officers have now under consideration a fire protection scheme for the whole district in which no doubt early burning on the lines adopted by Mr. Hodgson will form an important part.

Of the other serious fires the most important seems to have been the burning of a very large area of the Mudumalai forest which has been under rigid protection for the last 12 years. The circumstances were exceptional but it is much to be regretted that so serious a set-back has been experienced at this stage. There is reason to suppose that if fires could only be kept out of this forest for a sufficient period to allow the *Shorea* to spring up, the forest itself would become far less liable to such occurrences.

A serious loss to Government was also caused by the destruction by fire of about 600 acres of Pinus insignis and 150 acres of Acacia plantation at Kodaikānal. The causes of the fire and the extent of the damage done are under inquiry.

Protection against injuries from natural causes.

17. The most serious causes of injury of this nature are the growth of Lantana, of Prickly-pear and to a less extent of Strobilanthes.

The spread of Lantana is a constant menace. It has now been found in considerable areas in the *Ganjām* district and steps are being taken to try and eradicate it before it becomes unmanageable. In *Chittoor* it has spread of late years with great rapidity though still confined to a limited area and owing to the occurrence of sandalwood in the same areas, its eradication presents some special difficulty.

In the Southern Circle lantana continues to spread on all the hills and although attempts are being made to control it, it is very doubtful whether anything short of an intensive campaign throughout the whole country would be of any use. It is commoner outside the forests than inside them.

On the West Coast, wherever the conditions are favourable, its spread defies all attempts at control. It might be possible with great expenditure to eradicate it from the State forests but while private lands all round the forests are infested with it, the expenditure is not justified. There is this to be said in its favour that it improves the soil and prevents denudation on forest-denuded slopes. The present policy of the department is to confine its eradication to areas which are now under, or likely in future to come under intensive treatment.

With regard to Prickly-pear, it was decided at a conference of Conservators to abandon all measures of eradication except in special cases. Attempts made in many districts for many years past to deal with this pest have proved futile and have merely resulted in waste of public money. As in the case of lantana, it is useless to try and remove it from the forests so long as it continues to spread outside them. Like the lantana too, it has its uses and in some of the denuded and over-grazed forests in South India it provides the protection for young growth without which there would be few trees left. Experiments made in broadcast sowing and dibbling among patches of prickly-pear have been very successful in places.

Strobilanthes, owing to its habit of seeding and dying back at intervals of a few years, has no such terror for the forester as have the other posts; but it has done great harm in certain forests and is likely to be a menace after clear felling to the intensive regeneration of the moist forests.

SUPPLY.

Timber.

18. There has been an increase of 7,000 tons in the output of timber as compared with the previous year as the following figures show :—

	TONS.
During 1919-20	105,800
During 1918-19	98,850

This no doubt falls short of the outturn during 1916-17 and 1917-18, a period of abnormal activity owing to heavy demands from the Munitions Board for ship-building and for public works in Mesopotamia. Considering this fact the output during the year shows a fairly satisfactory development.

Specimens of important Madras timbers were sent to the British Timber Exhibition held in London during July 1920. It is learnt that as far as Indian timbers are concerned, the exhibition has been a very great success, and that the Indian exhibit has been admitted on all hands to be the outstanding feature of the Exhibition.

Fuel.

19. The output of fuel rose to 549,700 tons during the year. It is the highest on record except in 1917-18. The increase is due to special efforts made by the department to cope with the shortage of supplies. Coupes in arrears of felling were sold and in some urgent cases coupes were felled in advance of the time prescribed in the working plans.

There has been a fall in price of fuel in Kanara, Guntūr, Berhampur, Chingleput and Trichinopoly. In most other districts in which there are large towns the price has risen slightly. The highest prices at the close of the year were Kurnool Rs. 22-8-0 per ton; Madura Rs. 24-0-0 per ton, Tanjore and Trichinopoly Rs. 22-0-0 per ton and Tinnevelly Rs. 21-8-0.

In spite of a steady increase in the supply of fuel, the complaint still remains that the supply is inadequate. There is no doubt a serious shortage of fuel in the neighbourhood of some big towns which it is beyond the power of the department at present to remove. The destruction of growth on waste land and of private forests, and the want of enterprise of private land-owners are all important factors in the shortage.

Sandalwood.

20. In the auction sale held at Satyamangalam in November 1919, 217 tons of sandalwood were sold for Rs. 3,22,542, while, in the sales held at Tiruppattur and

Vellore in December following 280 tons were sold for Rs. 3,94,040. The total average price per ton obtained was Rs. 1,439 against Rs. 1,349 of the preceding year.

Revised sandalwood transit rules for the *North* and *South Mangalore Divisions* to check smuggling from the Government forests and to bring the sandalwood trade under more effective control are under consideration.

Bamboos.

21. Bamboos are becoming a more increasingly important source of revenue. During the year the value of bamboos sold was Rs. 348,908 against Rs. 316,296 in the previous year. The chief centres of departmental extraction were as in the previous year, *Kurnool West* to provide employment for the Chenchus and *South Malabar* for departmental timber operations. There was also an increased demand for bamboos in the Northern Circle for sugar caneprops.

Grazing.

22. Nineteen per cent of the total area of forests in the Presidency were closed to grazing either wholly or for part of the year against 25 per cent in the previous year. To the open area of nearly 15,000 square miles permits were issued for the grazing of 2,045,678 animals against 2,117,523 in the previous year, yielding an incidence of 4·69 acres per animal against 4·25 acres per animal during the previous year. The figure of average incidence however can only be considered as a rough guide, as the area quoted as open to grazing contains forests in which there is normally no grazing. The actual incidence in some forests is still extremely high.

The policy of gradually raising the grazing fees with a view to reduce excessive grazing was continued during the year. The rates of grazing fees were enhanced in *Kurnool* (to 8 annas), *South Arcot* (to 10 annas), *Madura* (to 8 annas), *North Salem* (to 8 annas) and parts of *Vizagapatnam* (to 8 annas) from the old rate of 3 annas per cow unit.

The grazing revenue realised during the year Rs. 8,53,555 is the highest on record for the past ten years as shown below:—

	Rs.		Rs.
1910–11	6,31,643	1915–16	6,86,571
1911–12	6,32,015	1916–17	7,03,869
1912–13	6,91,509	1917–18	7,39,674
1913–14	6,81,893	1918–19	8,24,111
1914–15	6,96,334	1919–20	8,53,555

The *Nellore* kancha system was extended to parts of *Chingleput* district, and in other districts attempts were made to persuade the villagers to keep their cattle from the grazing blocks until the grass had time to grow.

Hay.

23. Five thousand and ninety-four tons of hay were removed by the Military Department during 1919-20 from the forests. In addition to this, about 1,800 tons of hay were supplied departmentally. The departmental exploitation of hay has since been abandoned.

Tanning bark.

24. Unprecedentedly high prices were obtained for bark leases owing to the withdrawal of Government control over prices. Later, the market price fell considerably owing to the withdrawal of the prohibition against the exportation of raw hides, and to the sale of Australian and African wattle bark in the Indian markets. The tangedu contractors having speculated and lost heavily, applied for concessions to free themselves from serious embarassment. With a view not to handicap unduly the industry, they were granted a rebate of 15 per cent on the sale amounts. The total lease amount received by the department for the right to collect bark amounted to Rs. 7,60,584 compared to Rs. 5,72,328 in the previous year

Strychnine (Nux vomica).

25. The price of this product has risen owing to recent demands for insecticides. This produce has hitherto been leased together with other minor forest produce. At the instance of some contractors, it has been decided to sell the right to collect *Nux vomica* separately in future.

Bees' wax.

26. A total quantity of 10,000 lb. was supplied to the Munitions Board at an average price of Rs. 25 per maund.

Butea frondosa

27. A considerable demand for seed of this tree has arisen and the matter has been under correspondence with the Medical Store-keeper to Government. It is probable that supplies will have in future to be treated on the same lines as nux-vomica.

Gum.

28. The industrial possibilities of various gums and resins are being investigated by the Department of Industries. 5-lb. samples have been sent to Messrs. Bush and Co., London, for analysis, while 15-lb. samples of the same varieties are under collection and transmission to the Director of Industries for analysis by the chemists on his staff.

Paper pulp.

29. The Carnatic Paper Factory, Madras, was supplied at the cost of Government with various jungle grasses from the forests of *Cuddapah* and *Bellary*. The resultant pulp was sent for examination at Dehra Dun and was tested at the Titghar Paper Mills. As a result of the test the company has abandoned for the time being grass pulp in favour of bamboo pulp. At the instance of M.R.Ry. Alwar Chetti Garu, Managing Director of the Carnatic Factory, statistics collected by the Conservator, Northern Circle, showing the stock and location of bamboo in the forests of Bhadrachalam division have been furnished to the company, which proposes to establish a pulping mill at Rajamundry.

SYLVICULTURE.

30. Perhaps the most interesting feature of the year's work was the increased propagation of sandalwood in many forests of the Presidency. It has now been successfully established in the forests of the *Upper Gōdāvari* division, in some of the evergreen forests of the *Lower Gōdāvari* division, in *Kistna* and in *Cuddapah*; and it is being widely spread in other districts where previous sowings have proved successful.

Similar work has also been carried out with the Red Sanders (*Pterocarpus Santalinus*) which is found to yield excellent timber in localities so widely different from its native habitat as the coast line of the Northern Circars.

Taungya cultivation, a system adapted particularly to hill forests, also received more attention. It has the merit of being a class of work which the hillmen appreciate. The standing forest is cleared and burnt and the new forest crop, usually teak, is sown together with cereals and tended for the two or three years during which the land is under cultivation. A very large extension of this form of sylviculture is expected as soon as the Agency forests are brought under management.

The old methods of regenerating timber forests, based on European practice, are rapidly giving place to new. For reasons which are obscure, regeneration of teak and similar forest by seed from the standing trees is in nine cases out of ten a failure, whatever be the care taken in the treatment of the forest. Intensive regeneration by sowing or planting after clearing away the old crop is found more satisfactory and cheaper in the long run; but there is still much to be learnt on the subject, especially as to the best and cheapest method of preventing the young crop being choked by grass and weeds.

Details of this class of work and of other sylvicultural methods are given in the Conservators' reports.

RESEARCH AND EXPERIMENTS.

31. A Sylvicultural Research Officer was appointed during the year. The post was held by Mr. D. T. Barry until he went on leave and is now held by Rao Sahib K. R. Venkataramana Ayyar, Extra Deputy Conservator.

The work of the research officer is at present confined to the future treatment of the moist evergreen forests. It is a subject on which practically nothing is yet known although the Coorg Forest Department has been early in the field with some valuable investigations. Up to within the last few years the evergreen forests were considered to be unworkable except for the extraction of a few well-known species like Iron wood, Poonspar and White Cedar. War and the urgent demands for timber for all purposes have altered all our ideas and we now look to these forests for a very large proportion of our future supplies.

Fortunately we had an officer in Madras, the late Mr. A. W. Lushington, C.I.E., who was capable of identifying and valuing the species of these almost unknown forests and from tests of the timbers extracted, many of which have never seen a market, there are grounds for believing that the forests are of greater commercial value than was anticipated.

But it is one thing to cut a forest down and another to replace it and it is for the careful study of the regeneration of valuable timber trees of whose habits of growth little or nothing is known, that the services of a special officer were so urgently needed.

Mr. Venkataramana Ayyar is at present cofining his attention to seven only of the most commercially valuable timber trees and is studying their habits of seeding, and germination, and growth at all stages in selected localities on the West Coast. It must necesssarily be some years before definite results are obtained and much yet remains to be done in the way of organising research on a sound basis.

In other parts of the Presidency a great deal of research work was also carried out by district officers.

Timber seasoning experiments and experiments in regenerating Sal were carried out by Mr. Minchin in Ganjām.

Special observation areas for the study of Sandalwood spike disease were organized in Salem and Mr. Rigold has devoted considerable space in his report to a consideration of the various theories in vogue.

In the Central Circle an experimental farm for the study of the growth of the valuable tannin yielding plant *Cassia auriculata* was maintained under a special officer and Mr. Bennett has obtained results which will enable the department to extend the cultivation of the plant without risk of failure.

In the same Circle lengthy experiments were carried out to throw more light on the vexed question of the regeneration of Red Sanders, one of the most valuable trees in the Presidency; and on the best method of treating *Cassia fistula*—another valuable tannin yielding species—for the yield of bark.

There is at present great need for a second Sylvicultural Research Officer to undertake and co-ordinate these and similar researches into the growth of species in the dry forests of the Presidency; but unfortunately no officer is available.

DEVELOPMENT.

32. It seems desirable to give a brief account of the lines on which the department is endeavouring to develope and of the progress made. Much has been said of the necessity of developing the resources of the State, and the Forest Department is generally referred to as one in which development is most necessary and desirable. That the performance is somewhat halting is true of the past year, and the same remark will be true perhaps for some years to come. It is most unfortunate that the need for development should synchronize with the greatest shortage of experienced officers that the department has known for 20 years.

Such development as has taken place has been in the following directions:—

The Goomsur forests.—A scheme for the erection of a sawmill at Russellkonda has been worked out in detail and has received the administrative approval of Government. It is hoped to have the mill and connected buildings erected and in working order in the present forest year. As the only large sawmill on the East Coast, it is hoped that much business will be attracted and that the Goomsur forests, which are ripe for exploitation, will be fully developed.

Agency Forests.—Investigation of the forests in the Balliguda and Rampa countries show that there are considerable untapped timber resources in both localities; while Mr. Hodgson has brought to notice the very large area of forest in Bhadrachalam, which is ready for felling and regeneration. For the present little can be done for want of staff, but proposals have been submitted to form six new forest divisions in the Agency and to organize a forest service there to deal with future development.

The Nallamalais.—Special attention has been devoted to opening up these hills with a view partly to facilitate inspection and control and partly to bring more forest produce to the market. A five-year scheme of roads and buildings was prepared during the year and is under consideration.

The Mount Stuart Forests.—The scheme of building a steam tramway from Attapadi to the Tekkadi forests at a cost of over 10 lakhs was finally turned down, and a revised scheme for the construction of a metalled road to Mount Stuart and for a permanent forest station with provision for the housing of both staff and labour received the general approval of Government. Mr. Marshall, the Forest Engineer, has the alignment of the road and the preparation of estimates in hand, and it is hoped the complete scheme may be sanctioned and put in hand next year. It is anticipated that the scheme will result in a large increase in the output of timber from these forests.

The Chenat Nair forests.—A scheme for working these forests—the first mountain evergreen forests which the department has attempted to exploit—was sanctioned by Government during the year, and work was commenced.

The scheme provides for bringing down to the plains large timber from slopes at an elevation of 1,500 to 2,500 feet by means of slides and drag paths to the foot of the hill, to be carried thence by a metalled road to a depot at Olavakot railway station on the South Indian Railway.

Sufficient progress was made by the District Forest Officer, Mr. Padmanabha Pillai, with the assistance of the Forest Utilization Officer, Captain H. Irwin, M.C., to bring down 100 tons of timber to be sent to the Kolar Gold Fields for testing.

Accommodation for staff and labour on a ridge at 1,500 feet is also provided in the scheme which is expected to cost about Rs. 3 lakhs.

The project is expected to be in working order at the end of the current year and should provide an annual yield of 10,000 tons of timber for use at the Kolar Gold Fields and elsewhere.

The Forests of the Nilambur Valley.—Plans and estimates were sanctioned for the work of training the Nilambur River to facilitate the rafting of timber to the Coast. The work was delayed by the necessity of obtaining the approval of the riparian owners.

Experiments in the teak plantations were made with a caterpillar tractor for dragging timber, and the results during the year were on the whole encouraging, while investigations into the practicability of colonizing the swamps in the Amarampalem forests were made jointly by the Forest and Agricultural Department, but are still incomplete. The proposal is part of a larger scheme for the exploitation of the Amarampalem forests and the building of a new forest station in the neighbourhood.

The South Kanara Forests.—Tentative proposals were placed before Government, and provisionally accepted, for the reorganization of the department in the South Kanara district and for the gradual felling and regeneration of 400,000 acres of forest. Officers could not, however, be found to undertake the preparation of plans and estimates, and consideration of the project has to lie over for the present. In the meantime, the Public Works Department has taken in hand the training of the Paishwani River to improve its timber floating capacity.

A number of other partial investigations have been made, which throw light on the possibilities of the future. The Attapadi forests, the Silent Valley forests, and, above all, the Tinnevelly Ghat forests, are capable of supplying very large quantities of valuable timber, provided they are opened up by communications. But a large capital expenditure is necessary in all these cases of hill forest exploitation, and there are many technical difficulties to be overcome. Little progress can be made until the problems have been examined on the ground by the Consulting Forest Engineer to the Government of India, whose visit to Madras has been arranged.

FOREST PANCHAYATS.

33. Twenty-three new forest panchayats were formed during the year. Seventeen panchayats were dissolved on the ground of bad management and at the end of the year there were 372 panchayats in charge of 328,631 acres of forest and 18,939 acres of unreserves.

The general opinion of Conservators, who have however not much opportunity of inspecting the work of these panchayats, is that the management has usually been a failure. Mr. Bles on the other hand, who was employed on special duty to investigate the whole subject, considers that, while in some cases the management has been very bad, there is no reason for despondency.

His report to Government was submitted after the close of the year and is now under consideration together with those of the District Collectors.

FINANCE.

34. The total gross revenue during the year amounted to Rs. 59·54 lakhs against Rs. 49·17 lakhs of the previous year, showing an increase of Rs. 10·37 lakhs. The increase was spread over all the circles. It was due principally to abnormal prices obtained at the tangedu bark sales. The additional reasons given for increased receipts are the levy of enhanced rates of grazing in the three *Kurnool* divisions, exploitation of fuel from a larger area in *Nellore*, the sale of a larger quantity of sandalwood than in the previous year (281 tons against 214 tons) and to a large increase in the quantity of timber sold and to advancing prices in *South Malabar*.

The total expenditure under A. Conservancy and Works increased in all the circles except the Northern where the decrease was small and calls for no remarks. The noticeable increase was in the Southern and Western Circles. In the former circle, it was due to the extension of work carried out by the Forest Engineer and to the payment of compensation for acquisition of Tirumalavadi Mitta forests in the *North Salem* division, while in the latter circle it was due to expenditure on the new Chenat Nair scheme.

The expenditure under B. Establishments increased from Rs. 17·01 lakhs to 19·46 lakhs chiefly on account of war allowances paid to forest subordinates.

The net surplus amounted to the high figure of Rs. 24·37 lakhs against Rupees 17·85 lakhs in the previous year. To this surplus, the Northern Circle contributed Rs. 2·23 lakhs, the Central 6·72 lakhs, the Southern 7·90 lakhs and the Western 7·52 lakhs. The Northern Circle converted its small balance of Rs. ·18 lakh in the previous year to the handsome surplus of Rs. 2·23 lakhs during the year.

The subjoined statement shows the revenue, expenditure and surplus during the past ten years:—

Year.	Revenue.	Expenditure.			Surplus.
		A. Conservancy and Works.	B. Establishments.	Total.	
	Rs.	Rs.	Rs.	Rs.	Rs.
1910-11	37,71,940	19,06,427	13,12,125	32,18,552	5,53,388
1911-12	42,37,795	19,72,807	14,73,634	34,46,441	7,91,354
1912-13	41,18,771	15,55,534	14,86,623	30,42,157	10,76,614
1913-14	40,48,842	13,62,460	14,78,482	28,40,942	12,07,900
1914-15	40,17,852	13,89,296	15,47,355	29,36,661	10,81,201
1915-16	39,38,475	10,97,5 5	15,10,444	26,07,949	13,30,526
1916-17	47,79,016	11,88,726	15,95,648	27,84,374	19,94,642
1917-18	54,16,496	13,34,309	15,85,287	29,19,596	24,96,900
1918-19	49,16,509	14,30,594	17,01,345	31,31,939	17,84,570
1919-20	59,53,910	15,70,056	19,46,372	35,16,428	24,37,482
Total ..	..	..	..	..	1,47,54,577

It is seen from the above statement that the receipts during the year under review is the highest on record except for the year 1917–18; and that the surplus for the decade amounts to a little less than one and a half crores of rupees.

The absorption of such large yearly surpluses while so much of the forests remain either in an undeveloped or in an unprotected and degraded condition is a matter of serious concern. There appears to be ample justification not only for spending larger sums on remunerative works of development but still more on protection and conservancy by which to preserve vast areas of forests such as the Nallamalai forests (2,360 square miles) from destruction.

ADMINISTRATION.

Inspections.

35. His Excellency Lord Willingdon inspected the Nilambur plantations and the Amarapalem forests in November 1919 in company with Mr. Tireman, Mr. Robinson and the Chief Conservator to settle questions relating to future development.

Sir George Hart, C.I.E., K.B.E., Inspector-General of Forests, paid a visit to the Presidency during the year and discussed a number of important questions with Government.

Conservators.

The circle charges were held by the following officers :—

Northern Circle.—Mr. C. M. Hodgson.

Central Circle.—Mr. A. B. Jackson (furlough) up to 28th April 1920 and Mr. H. C. Bennett from 28th April 1920.

Southern Circle.—Mr. H. A. Latham (furlough) up to 6th February 1920 and Mr. B. F. Rigold from 6th February 1920.

Western Circle.—Mr. H. Tireman (furlough) up to 30th April 1920 and Mr. C. E. C. Fischer from 30th April 1920.

Proposals were made during the year to increase the number of circles from four to six. The existing Conservators' charges are so large and unwieldy that Conservators have neither time nor opportunity to exercise control or to give the help and encouragement to young and inexperienced officers in charge of forest divisions which the present state of the department makes so desirable. The sanction of the Secretary of State to these proposals is now awaited.

Imperial Forest Service.

Reorganization of the Imperial Forest Service with reference to the proposals of the Public Services Commission was sanctioned in November 1919; the scheme was subsequently modified with regard to the introduction of oversea allowances, towards the end of the year. Questions relating to details of recruitment, and training, leave and pension are still pending settlement.

Provincial Forest Service.

Orders on the reorganization of the Provincial Forest Service were also received from the Government of India at the same time although certain questions relating to the pay of individual officers, promotion of officers to the Imperial Service, percentage of recruitment of Provincial officers to the Imperial cadre and the constitution of the Selection Board remain still to be settled.

Subordinate Forest Service.

The scheme for the reorganization of the Subordinate Service was sanctioned by the Secretary of State for India in January 1919 and was given effect to from 1st October 1919. It resulted in an increase in the permanent staff of 37 rangers, 257 foresters and 770 forest guards, the post of deputy ranger being abolished and merged in the class of forester. Owing to difficulties of recruitment the full scheme cannot be given effect to in less than three years.

Circumstances have since shown that the ranger cadre needs further strengthening and proposals to this end will be formulated in due course.

Clerical Establishment.

With regard to the clerical establishment of the department which is in urgent need of reorganization, certain proposals made by the Chief Conservator are now under the consideration of Government.

New Appointments.

Captain H. Irwin, M.C., was appointed Forest Utilization Officer and Mr. D. T. Barry as Sylvicultural Research Officer. The latter on proceeding on furlough handed over charge to Rao Sahib M.R.Ry. Venkataramana Ayyar. Both these appointments were new to the department.

Forest College.

The Forest College remained during the year under the control of Mr. F. L. C. Cowley-Brown.

The senior students who passed from the College at the end of the year are reported to have been one of the best classes that the College has turned out and the result reflects great credit on the training.

All experienced officers agree that there has been a marked and steady improvement in the quality of rangers since the institution of the College at Coimbatore.

Their Excellencies Lord and Lady Willingdon were present at the annual College sports at which Her Excellency kindly gave away the prizes.

The College was also honoured by a visit by His Excellency during the Prize week, during which Sir George Hart and the Hon'ble Mr. W. G. Copleston, Chief Conservator of Forests, Bombay, were also present. The opportunity was taken to discuss a number of questions relating to the College.

Vernacular Training Schools.

Mr. Fischer brings to special notice in his report the improvement in the work and conduct of the subordinate establishment as the result of the institution of vernacular training schools.

These schools have been an unqualified success and are now recognized by Government as permanent institutions. The difficulty is that only about 120 foresters and forest guards pass through them annually, whereas the permanent staff when reorganization is complete will consist of 3,500 men. With the formation of two additional circles it will be desirable to provide two more schools and perhaps to increase the size of the classes.

General.

I desire to express my acknowledgment and appreciation of the uniform support and assistance I have received from the Conservators and the Principal of the College, and of the strenuous work which has been common to all branches of the forest administration during the year.

S. Cox,
Chief Conservator of Forests.

Order—No. 259, Development, dated 15th February 1921.

Recorded.

2. In August 1920 the Chief Conservator of Forests submitted certain proposals for altering the form of the administration report. The Government approved the proposals tentatively and stated that the report itself would afford the best means of judging how far they represented an improvement on the old form. In the reports of previous years, the Conservators' reports were consolidated into a single Presidency report. In the present form, the reports of Conservators are printed separately, an arrangement which furnishes a connected view of the work in each circle and facilitates the discussion of difficulties peculiar to individual circles. At the same time the general administration report has gained in conciseness and in the clear presentation of general problems. The Government agree that this plan constitutes a decided improvement and approve its adoption in future reports.

3. *Forest area and settlement.*—The figures indicate that this work is gradually approaching completion though a few hundred square miles still await final settlement. Fifty-six square miles of forest were disafforested during the year as being more valuable for cultivation purposes than for grazing or the supply of firewood.

4. *Working plans.*—The preparation of systematic working plans has long been accepted as the first preliminary step to the regular exploitation of forests. Little or no progress was made in their preparation during the year ; the Chief Conservator in fact reports that the work done in this direction was of a makeshift order. The Government recognize that the department is in no way responsible for this lack of progress, and that until the depleted staff of officers can be restored to strength the Chief Conservator cannot be expected to do more than meet problems as they arise by temporary solutions.

5. *Roads and communications.*—The year was one of planning rather than of execution, at least in respect of the larger schemes, which cannot come to fruition until funds permit. Two hundred miles of road and cart-track were constructed at a cost of Rs. 40,000 and about Rs. 60,000 were spent on the maintenance of 1,500 miles of road in use.

6. *Water-supply.*—The Government have recognized the desirability of extending grazing facilities by the improvement of water-supply available for cattle in reserves open to grazing. The absence of drinking water for cattle has always been one of the difficulties in securing a reasonable incidence of grazing, since the necessity for cattle returning at short intervals to their villages or other places where they can get water imposes an inevitable limit on the distance to which they can be driven to graze, and thus results in the overgrazing of the more accessible reserves and the comparative neglect of those less accessible. The Chief Conservator's remarks on this point in paragraph 10 are not very encouraging. The desired improvement, as might be expected, has proved difficult to secure in practice. The Government await with interest further experiments in this direction.

7. *Anti-malarial work.*—It is hoped that the measures in this direction, which are now becoming better understood in all departments, will be attended with success and that the expenditure will result in a material improvement to the health of Forest subordinates.

8. *Forest conservancy—General protection and breaches of the Forest Act.*—The Government concur with the remarks of the Chief Conservator on this head and agree with him in thinking that, allowing for recent increases in the protective establishment which naturally result in more forest offences being reported, the slight increase in the figures is no way discouraging.

The new rules alluded to in the concluding sentence of paragraph 15 of the report have since received the sanction of Government. They enable persons who have been accused of forest offences to exercise the option of compounding them up to the moment of trial instead of merely up to the time of issue of process as hitherto.

9. *Fire protection.*—In paragraph 16 of his report the Chief Conservator discusses in some detail the facts regarding the disastrous fires, which occurred during the year. The figures speak for themselves. It is reported that the extent burnt was probably not less than 1,000 square miles, and that during the last five years out of an area of some 6,250 square miles of specially protected forests at least 4,000 square miles have been burnt. Certain special cases are mentioned in the dry forest areas of the Cuddapah and Kurnool districts, as also a particularly regrettable case in the Mudumalai forest, which has been under rigid protection for the last twelve years. As regards possible departmental remedies some hopes are entertained of the scheme of early burning by departmental agency initiated in Kurnool by the Conservator, Northern Circle, which may be termed a form of prophylactic surgery applied to forests.

The Government welcome the candour with which the facts are narrated in the report, and agree that too much emphasis cannot be laid on the loss to the State which results from these fires, or on the comparative helplessness of the Forest department to prevent or control them, so long as the attitude of the village population remains

one of apathy and cases of active connivance with the incendiaries are not unknown. It has always been and still remains the fact that the carelessness of a few individuals or the desire of graziers to stimulate the growth of young grass for a few hundred head of cattle can and does annually destroy national assets running into lakhs of rupees. It also remains a fact that the Forest department receives most inadequate help in its efforts to prevent or extinguish such fires, although it is demonstrable that their occurrence, which is most frequent in the more valuable forests, decreases the supply and therefore enhances the price of timber used for house-building agricultural implements and other ordinary needs of the population.

It is remarkable that in the lists of forest grievances which are received from time to time so little attention is paid to this incendiarism and so little public indignation is excited against its perpetration. No satisfactory solution of this problem is likely to be found until public opinion, reacting on the villagers directly responsible, makes the burning of a forest as disgraceful, and therefore as rare as, for example, the deliberate burning of village crops or the destruction of village grain stores.

The Government desire that Collectors and other revenue officers should use every opportunity, at the annual jamabandi and in the course of their tours, of impressing this view of the case upon villagers living near forest reserves. The Chief Conservator might with advantage enlist the valuable help of the Publicity Board in the same direction.

10. *Supply.*—The Government notice with satisfaction the increase in the supply of timber and fuel during the year. The revenue derived from sandalwood was satisfactory. The shortage of fuel resulting from the destruction of growth on waste lands and of private forests is separately engaging the attention of Government. This problem is most pressing in the case of large towns, such for instance as Madura and the other places mentioned in paragraph 19 of the report where the prevailing prices are very high. The experience of casuarina plantations near the City of Madras indicates the most hopeful solution and no pains should be spared to encourage the development of private enterprise.

11. *Grazing.*—While the increase in grazing receipts is satisfactory from a revenue point of view, additional income is in no sense the main object of Government when enhancing the grazing fees in certain districts. Forests have been largely overgrazed in the past by cattle so worthless that their disappearance would involve little if any economic loss and the expectation is that the enhancement of grazing fees by restricting the number of cattle grazed will at the same time improve the pastorage and the condition of the cattle admitted to it.

12. *Tanning bark.*—The tanning industry was in a transition stage during the year, during which the leather industry was passing from a period of unprecedented high prices to one of extreme stagnation. The effect of these later conditions on the tanning industry and consequently on the demand for tanning bark was not fully felt in the year under report, and is likely to be more accurately gauged during the current year.

13. *Research Work.*—Interesting details are given in paragraph 31 of the report both of the preliminary work done by the Sylvicultural Research Officer appointed during the year and as regards experimental work done by district officers. The Government have also perused with interest the notes in paragraph 30 regarding sylvicultural work and in paragraphs 25—29 on the tests applied to paper pulp, and on the commercial use of various minor forest products. The Government recognize the need for a second sylvicultural officer but see no immediate prospect of being able to spare an officer for this work.

The Forest department sustained a great loss during the year by the death of Mr. A. W. Lushington, C.I.E., who had returned to active service subsequent to his retirement, and whose special botanical knowledge had always been of great service to the State.

14. *Development.*—In paragraph 32 of the report the Chief Conservator discusses the most probable lines of development, the projects actually under investigation or execution and the amount of progress made during the year under report. The

Government share the regret of the Chief Conservator that the commencement of a period, which, it is hoped, will inaugurate real development, should synchronize with such an exceptional shortage of experienced officers. The only projects of real importance which have passed beyond the stage of investigation and entered on that of execution are the Russellkonda Sawmill and the scheme for working the Chenat Nair forests. As regards other schemes the year, as in the case of 'roads and communications,' was one of preparation rather than of execution.

15. *Forest panchayats.*—Mr. Bles' report is still under the consideration of Government.

16. *Finance.*—Regarded from a purely financial standpoint both the gross receipts and the surplus of the department during the year were very satisfactory, but since their amount was partly due to abnormal prices obtained at the tangedu bark sales and a complete change in the conditions affecting these sales is anticipated, it is not possible to count on a surplus of equal amount during the current year.

The Government regard with sympathy the Chief Conservator's view that development is hampered by the absorption into general revenues and expenditure on purposes unconnected with forests of these large annual surpluses. It is a commonplace of business phraseology that, in order to secure expansion, a large part of any surplus must be returned to the business. It is not of course possible to regard Forests or any other department of Government as a self-contained entity and to treat it as an absolutely independent business, but the fact remains that development implies capital expenditure and large scale development is impossible without it. It is hoped that when the present financial stringency is relaxed the provision of much larger funds for expenditure on the development of forests will be possible.

17. The Government are glad to note that the Forest College and the Vernacular training schools continued to work satisfactorily.

18. The department continued to be efficiently administered during the year under report.

(By order of the Governor in Council.)

J. M. TURING,
Tempy. Addl. Secretary to Government.

To the Chief Conservator of Forests.
" Accountant-General, Madras.
" Government of India, Department of Revenue and Agriculture (with C.L.)
" Inspector-General of Forests (with C.L.)
" Publicity Officer.
Editors' Table.

ADMINISTRATION REPORT

OF THE

FOREST DEPARTMENT

OF THE

MADRAS PRESIDENCY

FOR THE

YEAR ENDING 31ST MARCH 1921

1920-1921

MADRAS
PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRESS
1921

PRICE, 11 *annas*.

134090

BOMBAY BRANCH

OF THE

Royal Asiatic Society.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1921.

FIRST CIRCLE.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. Alteration in Area.

Reserved forests and reserved lands.—Taking only the area of the divisions now comprising the *First Circle*, the year opened with 2,125 square miles of reserved forests and 400 square miles of reserved lands. Fifty-six square miles of reserved lands were transferred to reserved forests and 7 square miles excluded at settlement and by rectification of area. The balance of reserved forest and reserved lands on the 31st March 1921 were 2,181 and 337 square miles respectively. *First Circle.*

2. Forest Settlement.

2. 55·843 square miles were notified under section 16 of the Forest Act, while 338·6 remained under settlement. Of the latter 75·192 square miles comprising the Coringa extension reserve was actually settled, but the reservation took effect in the following year.

3. Demarcation.

3. Sixteen miles were demarcated. Ninety-eight miles were specially repaired at a cost of Rs. 611, while 2,992 miles were repaired by subordinates free of cost. The total length of line demarcated at the close of the year was 4,027 miles.

4. Forest Surveys.

4. None were made by the Government of India. Local surveys of areas under working plans were carried out by the Range officers. The reference maps were maintained in all districts except in *Ganjām*. The printing of the special reference maps prepared by the late Forest Map Officer has not yet been completed.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. Regulation of Management.

5. *Preparation and control of working plans.*—No new working plans were prepared or sanctioned. In *Ganjām* the 2 square miles of reserved land which was notified under section 16 of the Forest Act, was absorbed into the working plan area as they were extensions to the main reserves. Thus the area under working plans at the end of the year was 1,508 square miles against 1,506 at its commencement. Mr. Minchin's plan for the sal forests of Ghumsur was still in the press though its prescriptions are being carried out from 1919-20. Mr. Minchin's interim working plan for Berhampur range continued to be in force. *Vizagapatam*.—The plan drawn up by Mr. Raju Nayakar for 62 square miles of forest in Palakonda range remained unsanctioned pending inspection of the forests in question by the Conservator. In the case of Peddapalli forests and the eight reserves of the Golgonda taluk of Sarvasidhi range, sheep and buffaloes were admitted into the reserves during the grazing season 1920-21 under the sanction of the Chief Conservator of Forests. *Gōdāvari*

First Circle.

Lower.—The working plans of the Coringa and the Kandikuppa reserves were ordered to be revised after the Conservator inspected the forests in February 1921 and issued instructions indicating the lines on which the revised plan should be drawn up. Statistics are being collected for the preparation of a working scheme for certain reserves in Polavaram range.

2. Communications and Buildings.

6. Twenty-eight miles of new roads were constructed at a cost of Rs. 9,685 and 131 miles repaired at a cost of Rs. 4,636. All the existing roads were maintained in repair. The important roads that were taken up or completed were—*Ganjām*, Balinkia rest-house road, Budili-Ballabadi road, Kukuluba-Gayagonda road, Kondrai-Koradabadi road and cart-track from the Mohirigodo road to Kondalabondo. The first bridge over Odanginalla was completed. *Vizagapatam*—Kakarlakonda-Venkatapuram road, Kondasantha-Tadiparti road, road in Peddapalli West reserve and Makkipeta fire line road. The construction of the Polla-Donubai road was not continued as the original alignment was reported bad. *Gōdāvari Upper*—Yetapaka-Tunikicheruvu road, Katukapalli to Madhavaraopeta road, Narasingapeta to Bodanur road. In accordance with the wishes of the Agency Commissioner the alignment of a road from Sukkumamidi to Tondrika was taken up. No new works were undertaken in *Gōdāvari Lower* or *Kistna*.

7. *Buildings.*—Rs. 14,959 were spent on the maintenance of existing buildings. Rapid progress was made in the construction of the saw-mill buildings at Russellkonda. Work on all the various buildings was carried out simultaneously in order to utilise to the full extent the labour supply available. The other important works that were carried out were :—*Ganjām*—Inspection bungalow at Balinkia, quarters for the Range officer, Majjogoda, *Vizagapatam*—Rest-house at Golugonda, *Gōdāvari Upper*—rest-house at Tunikicheruvu and Range officer's quarters at Chintur and a number of subordinates' quarters in *Gōdāvari Lower* and *Kistna*.

8. The digging of two wells in connexion with the saw-mill scheme at Russellkonda was undertaken on sites selected by Captain Irwin. One is for the Mill Superintendent's bungalow and the other is alongside the saw-mill. Though the season was unusually dry, a copious supply of excellent water is reported to be available in both the wells. The Tummalapalem canal in *Kistna* continued to be under the control of the Forest department and was kept in repair.

3. Protection of Forests.

(*a*) *General protection.*

9. The number and classification of forest offences reported during the year are compared in the following statement with those of the previous year and the average of the three preceding years :—

Cases.	Injury to forests by fire.		Unauthorized felling.		Unauthorized grazing.		Other offences.		Total.		Average for three years ending with 1919-20.
	1919-20	1920-21.	1919-20.	1920-21.	1919-20.	1920-21.	1919-20.	1920-21.	1919-20.	1920-21.	
Cases taken to court.	4	1	345	301	53	47	40	33	442	382	464
Cases compounded.	4	5	1,118	829	283	203	139	129	1,544	1,166	1,650
Cases undetected.	117	178	36	40	5	6	..	3	158	227	162
Total .	125	184	1,499	1,170	341	256	179	165	2,144	1,775	2,276

New cases of the year.—Except under "injury by fire" the figures show a decrease compared with those of the previous year, the chief reason for the fall being that the period of the report is one of nine months. The increase under "injury by fire" is ascribed to the unusually bad fires due to the exceedingly severe hot weather which characterised this year. *Ganjām* suffered most in this direction and *Gōdāvari Upper* next. The 'felling' cases and the 'grazing' cases compared with the proportionate figures of last year remain practically the same.

Cases old and new dealt with during the year.—The percentage of cases convicted was greater than in the previous year and the punishments awarded by the Magistrates were generally adequate. But the compensations awarded to the department were reported inadequate in some cases in *Ganjam*. Protection from theft in parts of *Kistna* appears to be bad. Beyond the usual notice of warning published in the district gazettes to the villagers against setting fire to the reserved forest, no other special steps were taken, such as suspension of privileges or closure of reserves to grazing, enhancement of grazing fees and so forth. In *Ganjām* the conduct of village officers when taking into their custody seizures in forest offences was not satisfactory and their conduct had to be reported to the Collector and the Divisional officer. *First Circle.*

10. Rs. 25 was granted to subordinates and informers as rewards.

(*b*) *Protection from fire.*

11. Form 72 shows the area attempted to be protected and that actually protected. Out of the total area of 2,181 square miles of reserved forest, no fire protection was undertaken in about 10 per cent of the area. Of the area subjected to fire protection about 10 per cent was burnt.

In the unprotected areas in *Ganjām* there were 26 fires extending over an area of nearly 60 square miles. The fire season was an unusually severe one and in spite of satisfactory fire protection works carried out before the fire season started, the area burnt was excessive. The khond in *Ganjām* who is ever ready to render every assistance in extinguishing fires is equally ready to set the forest on fire to serve his own purpose, *viz.*, to drive out game and reduce cover, and he took full advantage of the abnormal dryness of the forest. Khond shikaries were also responsible for 16 fires covering an area of nearly 50 square miles in partially protected areas, *viz.*, the whole of the Chokkapad reserve and the major portion of the Rambha and Darpangia reserves. The offenders in three of these fires were detected red-handed. Those concerned in one case were convicted and sentenced to two months' rigorous imprisonment, one case was withdrawn as the offender decamped to Assam and the third case was awaiting trial at the close of the year. As a punishment the question of suspending some of the privileges allowed to the Khonds in Chokkapad reserve is under consideration. *Gōdāvari Upper.* The early burning system was introduced in this division and 258 square miles of reserves were treated in this way. The results are reported to have been particularly satisfactory in Bhadrachallam range as there was not a single fire in the whole area of 58 square miles early burnt. In the other three ranges the results were also good as only 19·32 square miles suffered from subsequent fires out of 200 square miles treated under this system, *i.e.*, less than 10 per cent. It is too early to base any conclusions on the above figures as the fire season was not nearly over by 31st March 1921 and as there were fires subsequent to that date in the early burnt areas. The remaining area, *i.e.*, 327 square miles of the reserves was protected by fire lines as usual and most of the fires recorded occurred here and covered an area of about 107 square miles. As in *Ganjām* the fires are attributed to the unusually dry condition of the forest owing to the failure of rains and the exceedingly severe hot weather experienced this year. The total area actually protected was 151,093 against 516,659 acres in the previous year. The fires in *Vizagapatam*, *Gōdāvari Lower* and *Kistna* were as usual comparatively small in extent. *In Lower Gōdāvari* where there are practically no *Bassia latifolia* trees inside the reserves about 1½ per cent of the forests are burnt annually, a very different state of affairs from what occurs in *Upper Gōdāvari* and other *Bassia* inflicted districts. The severity of the fire season will be seen from the fact that by the end of March 103,134 acres had been burnt in excess of the total area burnt during the whole of the previous year. The District Forest Officer, *Ganjām*, states that so far as "Sal is concerned regeneration under four inches in girth at the base is killed outright above ground level. Saplings lose their leaves up to a height of 20 feet. The former soon recover putting forth vigorous ground shoots, which in two months attain almost the same height as the original stem."

The average cost of special and general protection was Rs. 11-14-6 per square mile attempted and that of early burning in *Gōdāvari Upper* was Rs. 7-1-5 per square mile. The number and origin of fires are compared in Appendix A.

(c) Protection from cattle.

First Circle.

12. The area open to grazing was 1,996 square miles against 1,933 of the previous year and formed 91·5 *per cent* of the forests. Goats were completely excluded from the reserves. The number of cattle impounded showed a decrease compared with that of last year and the average of the three years ending 1919–20, but this year's figures only relate to a period of 9 months. Viewed proportionately the figures show an increase in the number impounded compared with those of last year. The rates charged remained the same. In *Gōdāvari Upper* the grazing incidence rose from 1·70 acres per cow unit in 1919–20 to 1·64 acres in 1920–21. In *Lower Gōdāvari* it fell from 3·18 to 3·34 acres per cow unit.

(d) Protection against injuries from natural causes.

13. Nothing of importance was done.

4. SILVICULTURE.

(a) Natural reproduction.

14. In *Ganjām* natural regeneration of sal was good in clear felled coupes. *Gōdāvari Lower.*—In 1917 Mr. Seager reported that self sown casuarina were germinating freely in compartments II, III and IV of Kandikuppa plantation, which had been previously clear felled. In May 1919 they were enumerated with the following results:—

Compartment.	Rs.
I	1,246
II	934
III	782
IV	1,705
V	733
Total	5,400

In December 1920 there were 1,596 seedlings in coupe I and 8,424 seedlings in coupes I to V against 5,100 in 1919 and in coupes VI to X there were 1,346. Owing to the failure of the monsoon there were no seedlings of 1920. As the above coupes had been clear felled during the past 8 years and no replanting done it seems to prove clearly that casuarina, at any rate in this area, is reproducing naturally. The water level is very near the surface and that probably accounts for the existing regeneration. In the coastal areas of *Kistna*, *Avicennia officinalis* was affected by the drought. In coupes I and II of Nachugunta and the closed area of Yelichitladibba which are under the constant influence of tides regeneration is excellent and the struggle between *Avicennia officinalis* and *Rhizophora macronata* for the mastery of the land is interesting. *Dendrocalamus strictus* has been seeding and dying for the last three years in Gokavaram and Peddapur ranges of *Lower Gōdāvari* and in Narasapatam range of *Vizagapatam*. It has not been dying in Polavaram range of *Lower Gōdāvari* or in the *Upper Gōdāvari* forests and only on the fringe of the Rampa forests. The District Forest Officer, *Ganjām* reports that he has seen some *Dendrocalamus strictus* flowering but only on a very small scale so far.

Curiously enough *Bambusa Arundinacea* which has been seeding and dying for several years past in the south of the Presidency has not been doing so here.

(b) Artificial reproduction—Regular plantation.

15. In *Vizagapatam* sandal reproduced well in Madalammakonda reserve where there are now two to three hundred plants. In Narasapatam range it is also said to be reproducing well. In the Weld reserve in *Kistna* red sanders was tried over an area of 5 acres partly by dibbling and partly by planting. Basket planting was found to be fairly successful but the cost was prohibitive. An area of 43 acres in *Gōdāvari Upper* was clear felled for taungya sowings in the ensuing rains. All the useful timber was collected and sold, the rest was burnt on the area itself. The Koyas in the vicinity have been given these areas for cultivation and for sowing teak with the field crop during the coming rains.

16. *Cultural operations—Ganjām.*—The growth of *Pterocarpus santalinus* in the Napier's Park continued to be satisfactory. An attempt was made in the Rambha Ravine coupe over an area of about 20 acres to regenerate artificially teak, *Pterocarpus marsupium*, *Gmelina arborea*, *Eugenia jambolana*, *Pterocarpus santalinus*, *Cedrela Toona* and *Terminalia tomentosa*, most of the seeds being raised in nursery beds at Balinkia, but the failure of rains caused a certain amount of mortality among the young plants. However sāl has sprung up naturally over the greater part of the area originally planted with other species. *Vizagapatam.*—Sandal was sown in Donabai, Madalammakonda, Peddapalli East and West, Venkatapuram, Kodavatipudi, Karaka, Pedimikonda and Arlova reserves. *Gōdāvari Upper.*—Out of 400 sandal seedlings surviving last year in Pegha reserve, most of them died during the long hot weather this year. A fire in the sandal area also destroyed a good number of the seedlings. Elsewhere the season proved unfavourable for regeneration, either the seed did not germinate at all or the seedlings died very early for want of rains. *First Circle.*

(c) Operations for improvement of growing stock.

17. In *Ganjām* extensive improvement fellings were carried out under Mr. Minchin's working plan. They are detailed under the next heading "Exploitation." In *Gōdāvari Upper* improvement fellings were also carried out on 40 acres in Sitarampuram reserve and 30 acres in Tunikicheruvu reserve by removing all the useless crooked trees and those that were interfering with the growth of the more valuable species. Some creepers and climbers were cut as usual by subordinates in all divisions.

5. Exploitation.

(a) System of Management.

(i) Major Produce.

18. The different sylvicultural systems in force were—

Clear or regeneration fellings.—These were carried out in *Ganjām* as prescribed in the two felling series of the Plains Sāl Timber Working circle and also in the Ravine Working circle. The areas concerned were cleared of all refuse by burning during February and March after the clear felling was completed. Undesirably vigorous switch growth was then cut back with the result that at the beginning of the growing season an even aged regeneration consisting partly of coppice shoots and partly of seedlings began to come up. Thirty-eight acres of casuarina plantation in *Gōdāvari Lower* and 1,433 acres in *Kistna* were clear felled.

Selection fellings—Ganjām.—All mature trees over 4½ feet in girth at breast height and all dead and dying trees were felled in the Dhimirijoli reserve and carted to Russellkonda saw mill depot. Four thousand and three hundred logs or 64,836 cubic feet were exploited in this way in one-half of the reserve, the other half being left over for 1921-22. *Gōdāvari Upper.*—These fellings were confined to unreserved lands which are under the control of the forest department and trees of above the prescribed minimum girth were felled. Sixty-three thousand four hundred and four cubic feet of timber were extracted as against 67,465 in the previous year.

Improvement fellings.—These were carried out in the Plains Sāl Timber Working circle and in the Ravine Working circle. *Ganjām.*—The work was carried out as follows:—First, mature trees fit for the saw mill were extracted departmentally. Next, trees to be retained were marked with tar numbers. After this had been done the balance of the growth was sold standing to contractors. This method worked satisfactorily and resulted in a certain amount of revenue being derived from the material which it would have been difficult to sell had the whole operation been done departmentally. Thinnings were also carried out over 73 acres in Plains Sāl Pole Working circle in Bontha range and also in certain old fuel coupes in Russellkonda range.

Simple coppice and coppice with standards.—The fuel coupes in all the divisions were worked under these systems; the areas exploited being 9 and 1 square miles respectively against 10 and 2 square miles in the previous year.

Unregulated fellings.—These were as usual confined to the unreserved lands and to the Rampa forests in *Lower Gōdāvari.*

(ii) MINOR PRODUCE.

First Circle.

19. *Bamboos and miscellaneous produce.*—Three methods of extracting were in vogue, *viz.*, departmental collection, leasing the right of collection and collection on permits. The first method was resorted to only to meet the petty requirements of the department, for repairs to rest-houses, etc. Bamboos and other important produce including tanning barks were leased out to contractors. The right to collect seigniorage from purchasers at certain shandies for minor produce purchased from hill tribes was leased in *Vizagapatam*. The offer for tangedu bark was low and the sale was therefore postponed.

Permits were given for extraction of all produce from the agency tracts in *Gōdāvari Lower* and from some of the forests in the *Upper* division which were not leased out.

Strychnos nux vomica was separated from other minor produce and leased out separately on a three-year lease in *Kistna*. In *Vizagapatam* and the *two Gōdāvaris* the produce was sold only for one year pending the formation of separate agency divisions. The existing lease in *Ganjām* expires at the end of 1922-23.

Fodder grass and hay.—Fodder grass in the coast forests of *Kistna* was leased out. In *Gōdāvari Lower* the removal of fodder grass was permitted on permits, no contractors having come forward to undertake the removals on contract.

The Military Department continued to make hay in *Kistna* paying a royalty of Rs. 2 per ton.

(*b*) *Agency of Exploitation.*

(i) DEPARTMENTAL AGENCY.

20. The outturn of major produce by departmental agency is compared below with that of last year :—

—	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos.	Minor produce.
			Rs.	Rs.
1919-20*	216	779	18,819	7,506
1920-21	420	245	405	876

* Includes Kurnools.

The quantity of major produce exploited was 16 per cent of the total outturn and chiefly consisted of timber felled in *Ganjām* for the saw mill at Russellkonda and selection fellings of ebony logs in *Upper Gōdāvari* for supply to Delhi.

The buildings for the saw mill at Russellkonda are under construction and as soon as they are completed and the saw mill established, the timber extracted will be converted there into different sizes and disposed of by special agency. The decrease in the outturn of fuel and miscellaneous produce is due to the transfer of the *Kurnool* divisions from this circle.

(ii) BY PURCHASERS.

21. *Major produce.*—The clear and improvement fellings referred to in paragraph 18 supra and the fellings in fuel coupes, were carried out by contractors.

The quantity of major produce and the value of minor produce removed by purchasers during the year are compared with those of the preceding year in the following abstract :—

—	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos.	Grass and grazing.	Other minor produce.
			Rs.	Rs.	Rs.
1919-20*	665	3,707	1,15,253	1,55,075	2,85,856
1920-21	478	2,733	1,11,766	46,856	63,171

* Includes Kurnools.

First Circle.

The figures for 1920-21 represent nine months and exclude the *Kurnool* divisions; hence the apparent decrease. Actually there was an increase in the value of bamboos removed this year due to the increased demand for sugarcane props. The removal of the *Kurnool* divisions chiefly accounted for the decrease under *grass and grazing* and the high prices that ruled for tanning barks in the previous year accounts for the very large difference under *minor produce.*

(iii) & (iv) BY RIGHT HOLDERS AND UNDER PRIVILEGES AND FREE GRANTEES.

22. The quantity and value of forest produce removed under this head were as follow :—

—	Timber in thousands of cubic feet.	Value.	Fuel in thousands of cubic feet.	Value.	Bamboos.	Grazing.	Other minor produce.	Total out-turn.
		Rs.		Rs.	Rs.	Rs.	Rs.	Rs.
Right holders	42	1,960	96	1,001	237	592	250	4,040
Free grantees	61	2,464	..	..	53	12,375	40	14,932

Rights.—They were enjoyed in *Ganjām* and *Gōdāvari Upper* under the conditions allowed at forest settlement. The estimated value of produce enjoyed was Rs. 4,040 against Rs. 31,880 in the previous year. The difference is due to exclusion of the *Kurnool* divisions.

Free grantees.—Such grants were made chiefly for rebuilding houses destroyed by fire. The estimated value of all grants was Rs. 14,932 against Rs. 16,371 in the previous year.

(c) *Outturn and sources of forest produce.*

23. The total outturn from all classes of forests by all agencies is compared with similar details of last year in the following statement:—

—	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos.	Gross value of minor produce including grass and grazing.
			Rs.	Rs.
1919-20*	971	4,847	1,35,115	4,86,337
1920-21	1,001	3,074	1,12,461	1,24,160

* Includes Kurnools.

The total number of cattle for which grazing was provided was 263,611 against 221,100 in the previous year.

CHAPTER III.—FINANCIAL RESULTS.

24. The following statement compares the financial position of the year with that of the previous year and the average of the preceding quinquennium :—

—	1920-21.	1919-20.	Average of the previous quinquennium.
	Rs.	Rs.	Rs.
Revenue	4,25,555	5,16,711	4,93,370
Expenditure.			
Refunds	14,080	6,958	7,529
A.—Conservancy and works	2,43,771	1,52,461	1,26,432
B.—Establishments	2,79,061	2,92,537	2,55,483
Total ..	5,36,912	4,51,956	3,89,444
Surplus ..	— 1,11,357	+ 64,755	+ 1,03,926

First Circle.

The results show a deficit of over a lakh of rupees. It is expected that the saw mill at Russellkonda will start working in January 1922 and that the financial position will then be appreciably improved. About three lakhs of rupees worth of timber is reported to be awaiting conversion and sale at the Russellkonda saw mill depot.

Forty-two per cent of the revenue was derived from *major produce*, 40 per cent from *minor produce*, 11 per cent from *grass and grazing* and seven per cent from *miscellaneous* items. Of the expenditure 23 per cent was spent on the exploitation of forests, 39 per cent on their upkeep and improvement and 38 per cent on miscellaneous items. The revenue outstanding at the end of the year was Rs. 22,146 of which Rs. 9,034 fell due within the year.

The estimated value of the produce at sale depots was Rs. 7,821. The important variations under 'Revenue' and 'Expenditure' are explained below.

Receipts.

(i) *By Departmental Agency.*

Timber—86,020.—The decrease occurred in *Ganjam* and *Upper Gōdāvari*. In the former division it was due to an unusual revenue last year from the supply of sleepers to Messrs. Bird & Co., and in the latter division, the timber collected departmentally in four ranges was not sold for want of bidders.

(ii) *By-purchasers.*

Timber + 14,483.—Due to increased demand for timber of valuable species from Rampa and the unreserves in *Lower Gōdāvari*.

Bamboos + 24,999. The abnormal demand for sugarcane props in the two *Gōdāvari* divisions contributed to the increase.

Minor produce—33,530.—This was due to the very exceptional prices realized last year for tanning barks.

(iii) *Miscellaneous (including confiscated drift and waif wood)* — 11,181.—The decrease is accounted for by the adjustment of the value of an elephant transferred to the Agency Department in *Vizagapatam* and the credit of thecontribution made by the zamindar of Vallur for the construction of a road in *Kistna* in last year's accounts, and the less revenue realized from driftwood in *Lower Gōdāvari*.

Expenditure.

No correct comparison can be made as the period dealt with is nine months against 12 of the previous year. Under A. *Conservancy and works* there was an increased expenditure of Rs. 91,310. This was chiefly incurred in *Ganjam* on felling timber for the saw mill and on the construction of the saw mill buildings. The introduction of the early burning system of fire protection in *Upper Gōdāvari* also contributed to the increased expenditure to some extent.

The expenditure under *B. Establishments* shows a decrease of Rs. 13,476 but the expenditure was only for nine months.

CHAPTER IV.—RESEARCH AND EXPERIMENTS.

25. *Research.*—Nil.

26. *Experiments.*—In *Ganjām* the experiments in connection with seasoning timber of various species at Russellkonda were continued.

A sample of *Bauhinia Vahlii* fibre was sent to the Superintendent, Vizagapatam Jail, who made two sample ropes from it. These were sent to the Director of Industries, Madras, along with a small sample of the raw fibre. His tests indicated that there was little prospect of being able to use the fibre commercially and supported the popular belief that the fibre is much stronger when wet than when dry.

CHAPTER V.—ADMINISTRATION.

27. *Tours.*—The charge of the Circle was held by — *First Circle.*

Mr. C. M. Hodgson from 1st July 1920 to 10th October 1920.
Mr. A. A. F. Minchin from 11th October 1920 to 8th January 1921.
Mr. H. Tireman from 9th January 1921 to 28th January 1921.
Mr. J. S. Scot from 29th January 1921 to 31st March 1921.

The touring of the Conservators was below normal owing to there being so many changes of officers in the short period of nine months. Mr. Hodgson inspected the Weld reserve in *Kistna*. Mr. Minchin visited Russellkonda and inspected the saw-mill buildings and some of the sal areas being worked under the new working plan. Mr. Scot made a detailed inspection of the Coringa reserve and extension in *Lower Gōdāvari* and issued instructions regarding the preparation of a working scheme.

The Chief Conservator of Forests visited Russellkonda and inspected the saw-mill buildings under construction and also visited some of the sal areas being worked under the new plan.

All the District Forest officers in this Circle except the District Forest Officer, *Upper Gōdāvari*, spent more than the prescribed minimum period in camp The shortage in this case was only three days and was due to three of the camping months having been eliminated from the period.

28. *Inspections.*—The Conservator inspected the District Forest offices of *Ganjām*, *Gōdāvari Lower* and *Kistna* and the results were generally satisfactory.

29. *List of offices audited.*—The accounts of *Vizagapatam*, *Gōdāvari Upper* and *Kistna* were audited by the Local Fund staff of the Accountant-General's office and the general results were reported to be satisfactory.

30. *Vernacular Training School.*—The school was held in Goomsur, *Ganjām*, for the fourth time and 35 subordinates were trained. The permission applied for by the Conservator, Bihar and Orissa, for getting his Forest Guards trained in this school was granted by the Government of Madras and five of his subordinates were accordingly admitted during this session. The school started on 6th January 1921 and closed on 18th June 1921.

31. *Health of the establishment including an account of measures of sanitation and casualties.—Ganjām*, *Upper Gōdāvari*, and some of the agency portions of the other divisions continued to be unhealthy. Fifteen subordinates in *Ganjām* and 30 in *Upper Gōdāvari* went on sick leave ; one subordinate was murdered, 19 died of fever, one of cholera and one of beri beri. The case of murder was that of a Forest Guard in *Kistna* district who was murdered along with a coolie in the Tadikalapudi reserve for trying to drive to the cattle pound a herd of cattle found illicitly grazing in the reserve. The case was tried in the Sessions Court but the accused was acquitted as there was insufficient direct evidence.

CHAPTER VI.—GENERAL.

32. *Formation and management of panchayats (to include forest village system).*—In *Kistna* division, three reserves of 3,186·89 acres were managed by eight panchayats. The District Forest Officer reports that he inspected them in January 1921 and found them worked satisfactorily except that in certain parts, the forests were overgrazed. No panchayats were in existence in the other divisions of this circle.

The forest village system is not in force in the circle.

33. *Measures for improving local supplies and facilities (includes water-supply, fuel, manure leaves, etc.)—Ganjām*—Permission was granted to one Mahadeva Patro of Payalpada to dig a channel 50′ × 4′ × 4′ and to construct a tank inside the Dhumi Dhumi reserve on condition that he should not bund up the water to the detriment of the people living lower down and that he should permit people possessing grazing permits to water cattle in the tank. The Khonds of Siddapodoro were given permission to repair a tank situated south of their village on condition that they should allow the use of the water by the people and cattle of Siddapodoro. *Vizagapatam.*—A tank was deepend at the top of Panchadarla reserve and a well sunk by the side

First Circle.

of the Makarapalem path in Peddapalli East reserve. Permission was given to one Ramachendra Bavajee to construct a shed by the side of the well on the Lambasingi Ghat road and he has promised to live there and build a small masonry reservoir for storing water for travellers and cattle. *Kistna.*—Veerakunta in Yerraguntapalli reserve was repaired at a cost of Rs. 100 and the small tanks near the Palace bungalow were repaired at a cost of Rs. 30. A few small tanks and wells were also repaired by the subordinates.

The wants of the people in the matter of fuel were fully met in all the divisions and there were no complaints. The demand for manure leaf was practically nil.

34. *Timber Transit Rules.—Ganjām.*—Under the District Forest Officer's orders all the tanna stations were closed between the 10th and 15th October 1920 but the Timber Transit Rules themselves had not been cancelled or modified antecedent to the above closure. The question of reopening some of the tanna stations is under correspondence with the Chief Conservator.

The rules are reported to have worked satisfactorily in the other divisions of this circle.

35. *Jungle tribes.*—These are found in all the divisions of this circle except *Kistna.* The District Forest Officer Mr. Wimbush writes as follows about the relationship of the Khonds to the Forest Department:—

"The relationship of the Khonds to the Forest Department would appear to resemble that of thoroughly spoilt children.

"In the form of rights, so far as Chokkapad reserve is concerned, and as concessions elsewhere, the Khonds are permitted to remove from the forests, free of charge, practically every necessity of life for themselves and their cattle.

"In return for these privileges they are expected to help the Forest Department to protect the forests in every way and more particularly from fire.

"As regards the amenities of life as opposed to its necessities, there are two things without which the Khond cannot be happy—one is shikar and the other mohwa flowers in due season.

"For the practice of the former which is illegal in reserved forest, and for the collection of the latter, a rank growth of grass and shrubs under the trees of the forest is a distinct handicap.

"The simplest way to remove this handicap is to burn the forest. Like other spoilt children, the Khond is in no way averse to doing what he knows he should not do, provided he has a reasonable, sporting chance of escaping detection and avoiding punishment. Unfortunately, he is well aware that his object can be attained with the greatest of ease and with the minimum of risk to himself. He knows, in fact, that he may even gain a certain amount of 'kudos' over the business if he plays his cards skilfully. What he does, therefore, is this:—During the clearing of fire lines he works willingly and creates a very good impression and earns a certain amount of money. Later on, probably about noon on a day in the hottest weather, he arranges for fires to be lighted inside the fire lines in five or six places almost simultaneously.

"By evening the local forest guards will have seen one of these fires and will arrive at the village demanding help to put it out.

"The Khond, with his tongue in his cheek, will turn out his village and take a number of men to help in extinguishing the fire. In the meantime the other fires will have got beyond all control and in due course the District Forest Officer will receive a report saying that the Khonds rendered every assistance and were of great help to the department but that unfortunately, say 6,000 acres of forest were burnt.

"The above is the impression which the present writer has formed of the Khond after a brief acquaintance with him, covering some three months of the worst fire season that he has ever experienced. The writer is open to conviction that the impression is a false one."

The writer of this report is new to the circle but would find it difficult to believe that the Khonds of *Ganjām* can compete in devilry with the Chenchus of *West Kurnool.*

Vizagapatam.—The hill tribes availed themselves of the privileges conferred upon them and there were no complaints. The scheme proposed by Mr. Latham some four years ago for forming a settlement at Busilikota in Sinivaram reserve by inducing the *Bhagatas*, to return on free forest lease, is approaching realization. Fifteen

families came there during the year under report. The *Koyas* and *Reddis* of the *Godavari* divisions continued to be serviceable as usual. They were employed on the general fire protection of forests as well as on the construction of roads and buildings, on demarcation works, etc. They were granted rewards in addition to the usual wages for the successful protection of forests from fire and were also allowed the concession of free grazing and free removal of forest produce for their domestic and agricultural requirements. The only trouble with the *Koyas* and *Reddis* is due to their drunkenness during the mohwa flower season and unfortunately that coincides more or less with the fire season. *First Circle.*

36. *Mining and quarrying—Lower Godavari.*—The District Board Engineer was permitted to open a new iron ore quarry in the Kogida forest reserve for quarrying 300 units of metal required for departmental works. *Kistna*—a prospecting licence for minerals was issued by the Collector to one R. Seshayya Nayudu of Bezwada. A sum of Rs. 770 was realized from rough stone quarried from reserved and unreserved lands. No mining or prospecting licences were issued in the other divisions of the circle.

37. *Live stock*—(*a*) *Elephants.*—The two baggage elephants in *Upper Gōdāvari* were in good condition. They were also utilized in dragging 24 logs felled departmentally from the forest to the cart-track.

(*b*) *Other animals.*—These exist only in *Ganjam.* There were six buffaloes with the exploitation range officer at the commencement of the year. Fifteen buffaloes were purchased during the year making the total 21. Of these one was sold leaving a balance of 20. These were used for dragging timber. The range officer in charge of saw-mill buildings at Russellkonda purchased 22 buffaloes and six bullocks for carting materials and 10 buffaloes confiscated in a forest offence were also transferred to him. Two of these were released to the accused and two died. In addition one other buffalo died. The balance at the end of the year was 47 buffaloes and six bullocks.

38. *Veterinary establishment.*—Nil.

39. *Civil suits.*—Both the suits referred to in last year's report are still pending. The appellant concerned in the driftwood appeal case preferred a second appeal to the High Court of Judicature, Madras, and the case stood posted to 18th April 1921. The civil suit filed by the Proprietor of Gangole Estate in the court of the Government Agent, Gōdāvari, and transferred to the court of the Agency Commissioner, Waltair, for delivery of certain portions of Kovvada and Kopalli reserves was still pending disposal. In *Kistna* a suit was brought by the quarry contractor for the recovery of seigniorage on the metal and gravel quarried in South Vallur zamindari lands for the Yagaram-Ramasingavaram road and it was pending decision in the Ellore Principal District Munsif's Court.

40. *Control of unreserved lands by the Forest Department.*—In *Ganjām*, the Revenue Department and the Forest Department are jointly responsible for the protection of unreserves but hitherto the Forest Department controlled the removal of forest produce. The felling of most of the large timber has been completed under the contract to supply Messrs. Bird & Co., Calcutta, with sleepers No such fellings are now going on. *Upper Gōdāvari*—the unreserved lands in this division are under the control of the Forest Department and the local supply of timber, fuel, etc., is met from these lands. Timber of prescribed dimensions is extracted under definite sanctioned schemes and sold in auction. *Kistna.*—The management of unreserved lands in the division with the exception of about 6,000 acres of Kone unreserve held by the Forest Department as grazing area pending its assignment, is vested in the Revenue Department. There is an area of 1,000 acres of unreserved land adjoining the Upputeru river containing mangrove growth. At the request of the Revenue Department it was first taken up for management by the Forest Department and divided into ten fuel coupes of 100 acres each. One coupe was leased out for Rs. 565 in 1920-21 but subsequently the Conservator refused to accept the responsibility unless the area was formally handed over to the Forest Department, so the area was handed back to the Revenue Department.

D. T. BARRY,
Acting Conservator of Forests, First Circle.

5th August 1921.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1921.

SECOND CIRCLE.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. Alteration in area.

Second Circle.

Reserved forests.—There has been an aggregate diminution in area of 3 square miles through the disafforestation of certain areas in the *Guntūr* division for assignment for cultivation and in the *West Kurnool* division in order to remove the boundaries from the close proximity of villages.

There was no other alteration in area during the period under report, but the disafforestation of three reserves aggregating about 4 square miles in the Bellary district in order to provide for extension of cultivation is contemplated.

2. *Reserved lands.*—There was no alteration during the period, the areas under settlement at the beginning remained undisposed of at the close.

2. Forest Settlement.

3. The Daroji tank-bed and the enclosures of three reserves in the *Bellary* and in one reserve in the *Guntūr* divisions were under settlement during the period but remained incomplete at the end. Rupees 2,344 were paid for the acquisition of the enclosures referred to in *Bellary*.

3. Demarcation.

4. Eleven miles of new lines were cut in the *Bellary* division and four in the *East Kurnool* division. In either case the demarcation was for the purpose of excising areas disafforested.

Thirty-three miles in the *Bellary* division and six miles in the *Guntūr* division were permanently demarcated at Rs. 1,700 and 65 respectively.

Elsewhere the work was restricted to maintenance, most of it by the departmental subordinates without extra cost. The proposal to demarcate the common boundary between the Cuddapah and Anantapur districts was dropped as unnecessary.

4. Forest Surveys.

5. (*a*) The Survey of India Department carried out operations in the *Guntūr* district where 26 reserves aggregating 562·50 square miles were surveyed on the 2″=1 mile scale and 11 reserves aggregating 50·44 square miles on the 1″=1 mile scale. The officer in charge writes "The areas consisted of low and undulating hills, covered with partly open and partly dense scrub jungle without heavy timber. The survey was for the most part easy, planetable traversing being only necessary in the flatter and more densely covered area." These surveys are classed as "Ordinary not paid for by the Forest Department."

6. (*b*) Local Forest officers surveyed coupes, enclosures and other minor items.

7. (*c*) *Reference maps* were maintained and posted to date.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. Regulation of Management.

Second Circle.

8. (*a*) *Preparation and control of regular working plans.*—The District Forest Officer of the *Bellary* district had a working plan for the Daroji tank-bed under preparation and submitted it to the Conservator after the close of the period under report.

The working plans for the Kalyandrug and Madakasira ranges in the *Anantapur* district were revised by the District Forest Officer during the period. The former revision received final appro val during the period and the latter immediately after its close. These two plans, which cover 90¼ and 87½ square miles respectively, are simple ones prescribing fire protection, regulation of grazing and dibbling of sandal seeds in selected areas.

The revision of the Gooty range working plan in the same district is in progress and is promised by the District Forest Officer at an early date.

No new working plans were prepared or under preparation in the *Guntūr* district but that for the Bollapalli Reserve and the Guttikonda II block of Vinukonda range submitted in the previous year was sanctioned tentatively for a period of three years.

In the *East Kurnool* division a preliminary scheme for the extraction of bamboos and firewood for the Cumbum range was prepared but was returned for the preparation of a working plan for the whole division.

No new plans were submitted or under preparation for the *West* and *South Kurnool* divisions.

Plans are required for the Yerramalais and the Terai forests of the *West division* and also a revision of that for Veldurti reserve which has lapsed and in the *South division* the Owk working plan requires revision.

2. Communications and Buildings.

(*a*) *Roads and bridges.*

9. During the nine months under report Rs. 2,335 were spent on the construction of 27 miles of new communications against Rs. 2,833 for precisely the same aggregate length in the preceding twelve months.

No new work was undertaken in *Bellary*, *Anantapur* and *West Kurnool* divisions. The chief works undertaken were: a road from Nallamadugupenta to Chinna Mantrala for 4¾ miles in *East Kurnool* for Rs. 564 and 1 mile and 6 furlongs of the road from Obalesunipenta to Perikalapenta in the *South Kurnool* division constructed at a cost of Rs. 599.

The other new works consisted of minor export roads, bridle-tracks and footpaths.

10. Rs. 10,207 were spent on the repair and maintenance of 148 miles of existing communications against Rs. 8,817 for 150 miles in the previous 12 months.

The only items calling for notice are the sums of Rs. 1,050, Rs. 2,200 and Rs. 650 contributed respectively by the *East*, *South* and *West Kurnool* divisions towards the upkeep of local fund roads in which the Forest Department is interested.

(*b*) *Rivers.*

11. Nothing was done or required.

(*c*) *Buildings.*

12. The total expenditure on new buildings was Rs. 12,139 as against Rupees 10,901 and the repairs consumed Rs. 11,039 against Rs. 7,965. The increase is attributed to the rise in the price of labour and materials and in respect to the cost of maintenance also to the raising of the pay of bungalow watchers.

No new works were undertaken in the Bellary division. The chief works elsewhere were—

(1) Part construction of a Range office at Gooty in the *Anantapur* division.
(2) Completion of a Range office at Bapatla.
(3) Completion of subordinates lines at Srigiripad.

(4) Construction of subordinates lines at Remidicherla. The last three all in the *Guntūr* division. *Second Circle.*

(5) Part construction of a rest house at Yeguvacherlapalli in the *East Kurnool* division.

(6) Part construction of a rest house at Yerragondapalem in the same division.

(7) Beginning a rest house at Obalesunipenta in the *South Kurnool* division.

(*d*) *Miscellaneous.*

13. The expenditure on new works was Rs. 1,488 with Rs. 1,097 for repairs against Rs. 291 and 571 respectively in 1919–20.

The expenditure was entirely on wells.

The expenditure on all these heads would have been considerably greater but for the financial stringency that dictated retrenchment.

3. PROTECTION OF THE FORESTS.

(*a*) *General protection.*

14. The number of cases reported during the 9 months under report was 5,009 against 5,519 in the previous 12 months. At the same average rate the figures for a complete 12 months would be 6,679 or an increase of 21 per cent.

There is an increase in all divisions, amounting 50 per cent in *West Kurnool* if the undetected cases are left out of account. The increase is slight in the *Anantapur*, *East Kurnool* and *Guntūr Districts*. But the last-named returns by far the heaviest figure—1,868 cases (including 35 undetected) for a period of nine months.

15. The increase is generally attributed to the bad season and this is probably as correct as such estimates of causes generally are. It seems to the Conservator very doubtful that any definite cause can be given for the rise and fall in cases, which probably vary in different parts of the same district through entirely different factors. It is to be remembered that probably not more than 1 in 10 cases is actually detected or at least reported. Bearing this in mind it is easy to imagine a dozen different causes which might lead to variation in a given beat, section or range.

The increase in the number of pending cases at the close of the period, 1,671 against 1,469 is probably an approximately correct reflex of the general increase in reported cases.

16. There were no particularly important or sensational forest cases.

It is to be noted however that assaults on forest subordinates were rather a feature of the period in the *Anantapur* district and one forest guard there was murdered. The case is still under enquiry by the police.

In one case three employees of the Military Grass Farm severaly assaulted a ranger and a forester who detected them at illicit practices. On the case against them being prosecuted they were sentenced the first to four months' rigorous imprisonment and a fine of Rs. 200; the other two to one month's rigorous imprisonment and a fine of Rs. 100 each.

In the case pending in the *Bellary* division at the beginning of the period the Forest subordinates, against whom there was a counter charge, were acquitted.

In the Palnad range of the *Guntūr* division the adverse season resulted in a strong movement to defy the Forest laws. The small Forest staff found itself more or less helpless in the face of organized unlawfulness which had been fomented by the preaching of 'Non-Co-operators.' As this disturbance began only just before the close of the period and ripened after its close and is still being dealt with, it can only be reported on in detail in the next report.

17. The District Forest Officers generally are satisfied with the sentences inflicted by Magistrates, with the exception of that of *West Kurnool* who considers them to be lenient.

18. Rewards to subordinates and others who assisted in the detection of forest offences to the extent of Rs. 147 were disbursed.

(*b*) *Protection from fire.*

Second Circle.

19. No very satisfactory review of fire protection can be made in this report as it is for a period of only nine months and terminates in the middle of the fire season and no comparison can be made with the figures of the last report as that covered a full 12 months.

The total area attempted in the Circle amounts to 2,773,515 acres against 2,333,831 acres.

20. There are three systems of protection in vogue.

Special protection under which fire lines are traced and burnt.

Early burning which was started last year under the instruction of Mr. C. M. Hodgson and which was continued on a larger scale (837,032 acres against 489,620 acres) in the period under report. This method is confined to the three divisions of the *Kurnool* district. Under this system comparatively small patches of forest are burnt over early in the year when comparatively little damage is done and this prevents the spread of fire over vast areas later on in the fire season. The method is reported to have yielded good results.

General protection which is carried on only by supervision of the general staff as well as special fire patrols but without the burning of fire traces.

(*c*) *Protection against cattle.*

21. The several District Forest Officers give such little information in their reports on this subject, presumably because the figures are for nine months instead of a full year. that without local knowledge the writer of this report is unable to throw any light on or amplify the figures appearing in the forms. Owing to a bad season and scarcity, areas hitherto closed were thrown open in the *Bellary* and *Anantapur* divisions.

(*d*) *Protection against injuries due to natural causes.*

22. Beyond a little clearing of prickly-pear in one reserve of the *Anantapur* district, nothing under this head was done.

4. SYLVICULTURE.

(*a*) *Natural reproduction.*

23. The stereotyped statements which are of no value are reproduced in all district reports. The only points of interest are—

(1) Sandal is reported to be spreading by naturally sown seeds in the *Anantapur* district.

(2) In *Guntur* the great shortage of *Hardwickia binata* seeds is ascribed to the unusually severe lopping of that species owing to the adverse season.

(*b*) *Artificial reproduction.*

24. No new regular plantations were started during the period. The previous plantations are reported to be thriving.

(*c*) *Cultural operations.*

25. Sandal seeds were dibbled over about 20 acres in all in seven reserves in the Anantapur district. In the same district red sanders and *Pongamia glabra* were dibbled in the Muchukota reserve. These operations were entirely unsuccessful owing, it is stated, to the very dry season. In *Bellary* a small quantity of sandal seeds were sown in the Somalapuram reserve and all germinated, but nothing is stated as to the further fate of the seedlings. In the *Guntur* district sowings of *Hardwickia binata*, *Acacia arabica* and sandal and a few other species are reported to have been unsuccessful owing to the abnormal heat and drought and to bad supervision by Range officers; sowings of *Avicenna officinalis* (Mada) in the mangrove forests under the Repalli working plan are stated to be successful and the seedlings are doing well. All sowings in the *Kurnool East* division of *Cassia auriculata* and

of unspecified species in "Emergency coupes" failed owing to drought. In Cumbum reserve the sowing of "Ramanah" grass (*Ischæmum laxum*) from Bellary was quite successful. *Second Circle.*

A similar lack of success with sowings of timber species is reported from the *West* and *South Kurnool* divisions.

(*d*) *Operations for the improvement of the growing stock.*

26. Beyond a little climber cutting in *East Kurnool* division by the subordinates nothing was done in this direction.

5. Exploitation.

(*a*) *System of management.*

(i) Major Forest Produce

27. The following statement shows the various methods and the areas under each adopted in the working plans:—

System.	Area sq. miles.	Per cent.
1. Clear felling	4	0·2
2. Coppice with standards	110	6·3
3. Improvement fellings	209	12·0
4. Selection	86	4·9
5. No definite system	1,341	76·6
Total ...	1,750	100

In *East Kurnool* division there is no area under working-plan, but there is a tentative scheme for 147·34 square miles which appears to be a sort of cleaning, dead and dying trees only being removed.

(2) Minor forest produce.

28. *Bamboos* were sold standing by compartments to contractors. Other items of minor produce are also removed for the most part, under leases. In the Nallamalai Hills of *Kurnool*, however, the collection is *quasi* departmental, as it is collected by Chenchus, who are paid by the department.

(*b*) *Agency of exploitation.*

(*i*) Departmental Agency.

Major produce.

29. The extraction by departmental agency in all the divisions except *Kurnool East* and *West* is insignificant. It was done for departmental purposes and in *Guntur* to clear an area for experimental purposes.

In East and *West Kurnool*, 83 per cent and 50 per cent respectively of the total yield of major produce was worked out departmentally through the agency of the Chenchus. This working is rather with the object of providing labour for these men than for sylvicultural or revenue purposes.

Minor produce.

30. In the Nallamalai Hills of the *Kurnool* division, bamboos and minor forest produce are collected departmentally through the agency of the Chenchus. Besides this only seeds for departmental use for artificial regeneration were collected departmentally.

(*ii*) By purchasers.

Major produce.

31. With the exceptions noted in the last section, timber and fuel is extracted by contractors who purchase coupes standing.

No useful comparison with the previous years working is possible as the period under report is for nine months only. In *Guntur*, there was a considerable falling

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off in the extraction of fuel, about 35 per cent. This is not explained by the District Forest Officer who merely reports that it ' was due to the less number of coupes and trees in tank beds sold '.

32. Minor produce.—Owing to a rising demand for nux vomica this article of minor produce, which had previously been clubbed together with a number of other items, was sold separately. Comparison of the results is not possible since the precise proportion borne by this item in the general sales is not known and, moreover, in past years only a small proportion of the available supply was collected.

From 1921–22 the lease for this produce has been sold in all the divisions but *West Kurnool* for a period of three years, each division forming a single unit. In the three *Kurnool* divisions the lease is not for collection but for the right to buy at fixed rates the seeds collected by the Chenchus.

33. There was a great falling off in the demand for the bark of *Cassia auriculata*; not only were prices all round less than in the previous two or three years but they were so low in some cases that the sales were cancelled as it was thought preferable to give the areas a rest rather than accept such trifling sums. The leases for this article were for one year only.

34. The Military grass farms made hay in the *Bellary*, *Anantapur*, *South* and *West Kurnool divisions*, paying seigniorage to the department at Rs. 2 per ton. The right to make hay in half a dozen reserves of the *Bellary* district was leased to Mr. Howes for Rs. 350. Elsewhere in open areas the local villagers were allowed to cut and remove grass free of charge.

35. For other items, grazing, manure leaves, stone, etc., permits were issued as usual.

(*c*) *Outturn and sources of forest produce.*

36. It is not possible to make a useful comparison with past years owing to the alteration in the period of report. The Military grass farms extracted the following quantity of hay :—

	Tons.
Bellary	606
Anantapur	1,400
South Kurnool	766
West Kurnool	287
Total ...	3,059

This appears to be considerably less than in past years and is due partly to the abnormally unfavourable season and partly to the fact that extraction was not complete at the close of the curtailed period under report.

(iii) By right and privilege holders.

37. The existing rights are those possessed by the Chenchus of the *Guntur* and *Kurnool districts* to the usufruct of tamarind trees at a nominal rate, to other minor produce, materials for huts free and to free grazing. In *West Kurnool* the value of the latter privilege is estimated at Rs. 4,666.

In *South Kurnool* the trustees of the Ahobilam temple have a right to timber, fuel, bamboos and fibre free for the construction of huts for those visiting the temple. The value of the produce actually utilized by the temple authorities during the period is valued at Rs. 32.

(iv) By free grantees.

38. Free grants were made of produce for the rebuilding of houses burnt down to a total value of Rs. 6,754.

CHAPTER III.—FINANCIAL RESULTS.

39. Owing to the change in the period of the report and to the reorganization into six circles no comparison with past financial results can be made.

The following statement gives the results of the nine months under report for each of the six divisions and the net financial result of the previous twelve months :— *Second Circle.*

District.	1920-21 (nine months).			Total expenditure.	Net result.	1919-20). (12 months. Net result
	Revenue.	Expenditure A.	Expenditure B.			
	RS.	RS.	RS.	RS.	RS.	RS.
Bellary	1,29,040	11,801	44,381	56,182	+ 72,858	+ 1,54,879
Anantapur	2,25,424	13,326	51,199	64,525	+ 1,60,899	+ 2,75,701
Guntur	1,30,436	16,197	49,983	66,180	+ 64,256	+ 1,02,645
East Kurnool	65,275	26,877	42,674	69,551	— 4,276	+ 18,167
South Kurnool	94,038	21,894	54,487	76,381	+ 17,657	+ 22,363
West Kurnool	1,20,527	47,257	65,059	1,12,316	+ 8,211	+ 98,438
Total ..	7,64,740	1,37,352	3,07,783	4,45,135	+ 3,19,605	+ 6,72,193

40. Of the revenue—

13·5 per cent was derived from major produce,
7·5 „ from bamboos,
33·5 „ from grass and grazing,
31· „ from the minor forest produce, and
14·5 „ from miscellaneous sources.

100·

Of the expenditure, exploitation claimed 16 per cent, upkeep and improvements 64·0 per cent and miscellaneous 20· per cent.

There has been a falling off in revenue during the period under report. This is due mainly to the want of demand for tanning barks already referred to.

There has been a considerable rise in expenditure in spite of cutting down works owing to financial stringency. This increase is due partly to the rise in prices and partly to the increase and pay of all ranks.

CHAPTER IV.—RESEARCH AND EXPERIMENTS.

41. Experiments with *Cassia auriculata* cultivation have been stopped in all divisions but *Anantapur*, where they are concentrated in the Golla reserve. These were described in detail in the Administration Report for 1919-20 for the old Central Circle and only a brief reference is necessary here. Methods I and VI (broadcast sowing without disturbance of the soil and dibbling of seeds under shelter of trees the soil being dug up to a depth of 6 inches with a spike or crow-bar) have been discontinued as the results showed no promise.

The other four methods have been kept up and the seedlings are reported to be "doing remarkably well, many of them have died out owing to the continued drought, but, on the whole, there is a large percentage still to be found." The rainfall during the period under report has been miserable—the nine months, which should bring practically the whole of the year's precipitation, yielded but 9·81 inches of which 7·89 fell in August and September and ·6 was the maximum in any other month ; there being no fall at all in December, February and March.

The following compares the number of seedlings as the result of the last countings mentioned in last year's report and the last of the current year :—

Method.	Area of plot.	Seedlings in June 1920.	Seedlings in February 1921.	Remarks.
	ACRE.			
II	1/8	592	573	6" high, doing well.
III	1/8	16,040	8,522	Many 12" to 18" high, healthy and established.
IV	1/8	11,519	7,443	Many 10" to 19" high, healthy and established.
V	1/8	26,394	6,205	Many 12" to 20" high, exceptionally healthy.

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Ten new plots covering an area of 30 acres were instituted in August and September 1920 and dealt with as follows :—

Plot No. 1—3½ *acres.*—Three furrows ploughed 2½ feet apart. Seeds sown at six seers per acre in the middle furrow and covered by a furrow on either side. Cost Rs. 1-4-0 per acre. Enumeration in February 1921 on 1/10 acre gave 1,681 seedlings averaging 4″.

Plot No. 2—3½ *acres.*—Furrows 2½ feet apart. Seven seers of seeds per acre sown in one furrow and covered by the next. Cost Rs. 2 per acre. Enumeration of 1/10 acre in February 1921 gave 368 seedlings averaging 4″.

Plot No. 3—2 *acres.*—Sown broadcast, then close ploughed in one direction ; five seers of seed per acre. Cost Rs. 2 per acre. Enumeration of 1/10 acre in February 1921 gave 1,894 seedlings averaging 6″.

Plot No. 4—3½ *acres.*—Two furrows ploughed side by side. Six seers of seed per acre sown in the furrows and covered by ploughing a furrow on the outer side of each. Cost Rs. 2 per acre. Enumeration of 1/10 acre in February 1921 gave 1,036 seedlings averaging 4″.

Plot No. 5—3½ *acres.*—Same as plot No. 3 but seven seers of seed per acre. Cost Rs. 1-12-0 (?) per acre. Enumeration of 1/10 acre in February 1921 gave 1,921 seedlings averaging 6″.

Plot No. 6—4 *acres.*—Similar to plot No. 2 but furrows 10 feet apart and two seers of seed per acre. Cost As. 4-6 per acre. Enumeration of 1/10 acre in February 1921 gave 115 seedlings averaging 4″.

Plot No. 7—4 *acres.*—Similar to plot No. 1 but two seers of seeds per acre. Cost As. 8 per acre. Enumeration of 1/10 acre in February 1921 gave 197 seedlings averaging 4″.

Plot No. 8—1 *acre.*—Similar to plot No. 4 but two seers of seeds per acre. Cost As. 8 per acre. Enumeration of 1/10 acre in February 1921 gave 381 seedlings averaging 4″.

Plot No. 9—2 *acres.*—A single furrow ploughed and sown with two seers of seeds per acre, a second furrow alongside is ploughed to cover the first. Cost As. 4 per acre. Enumeration of 1/10 acre in February 1921 gave 157 seedlings averaging 4″.

Plot No. 10—3 *acres.*—Twelve seers of seeds sown broadcast on undisturbed soil. This failed entirely.

42. The experiment initiated and reported on last year with the object of ascertaining the best age at which the bark of *Cassia fistula* should be exploited was continued in the *Anantapur* division. Of the 117 trees cut back for coppice in the first block, 18 died and the remainder thrown out, shoots of which some are now 8 feet high with a girth of 5″. Two hundred and seventy-one more trees were cut back in the second block.

43. The experiments connected with Red shumac from *Anogeissus latifolia* were discontinued. The experimental tapping of *Boswellia seriata* in the *South Kurnool* division is being continued. No results can be expected yet.

Experiments in thinning the teak plantation made in the West Kurnool division in 1906-07 were started.

CHAPTER V.—ADMINISTRATION.

44. The outstanding feature of the period was the sanction for the creation of two new circles in the Presidency. This necessitated the redistribution of the divisions and the creation of the II Circle with headquarters at Bellary consisting of six divisions, three each from the old Northern (three *Kurnool* divisions) and Central Circles (*Guntur*, *Anantapur* and *Bellary* districts). The new circle was instituted on 5th February 1921, but the first month was occupied in organizing an office staff and preliminary work. The six divisions continued to be controlled by the Conservators of the new first and third circles and were handed over on 1st March 1921. A list of officers who held charge of the circle and districts will be found in Appendix C.

45. *Health and Sanitation.*—The Conservator Mr. A. B. Jackson was unfortunately prostrated with *enteric* just before the close of the period and had to proceed on leave from 1st April.

On the whole, the health during the period under report has been fair. There were two deaths from malaria, two from consumption and one from dropsy. Several officers have suffered from malaria and had to be granted leave. Guinea worm is prevalent in *Guntur* and *Kurnool*. *Second Circle.*

The question of good quarters and the general sanitation and proper water-supply at forest centres in the Nallamalai Hills of the *Kurnool* district requires attention and should receive careful consideration as soon as the financial conditions improve. All wells should be draw wells and not accessible to men or animals as a preventive against guinea worm.

46. *Touring.*—No touring was done by the Conservator during the short period after the formation of the circle, but all the divisions were visited by one or other of the Conservators before the reorganization and all the offices except that of the *Guntur* district were inspected.

The District Forest Officers, *Bellary*, *Guntur* and *East Kurnool* spent less than the proportionate number of days on tour for the nine months under report. It is understood that this had been made up during the ensuing three months.

All the range offices were inspected by the District Forest Officers either during nine months under report or immediately after.

Audit of the District Forest Office.

47. *Accounts.*—Only the offices of the *Anantapur* and *South Kurnool* divisions were audited by the Assistant Inspector of Local Fund Accounts during the period. The results in either case were satisfactory.

48. *Recruitment.*—Nil.

49. *Vernacular Training School.*—None was held within the circle, the candidates from Bellary, *Anantapur* and *Guntur* divisions being deputed to the school held at Cuddapah in the third circle and those from the Kurnool district to that at Russell-konda in the first circle.

CHAPTER VI.—GENERAL.

(i) Formation and Managemnt of panchayat.

50. The number of panchayats (105) at the beginning of the period remained unaltered at its close but three were dissolved and two new ones created in the *Bellary* district and one new one in *South Kurnool*.

The panchayat management cannot be said to be satisfactory and six in the *Anantapur* district have recently been proposed for dissolution by the Collector. The working is reported to be particularly bad in the *Guntur* division.

It is to be feared that too often the panchayat powers are used in the interest of the wealthier and more influential people and to the detriment of the poorer classes. In the *Guntur* district the people themselves have asked that panchayat management should cease. It has been represented to the Conservator by a responsible Indian gentleman, a member of the Legislative Council, that it is hopeless to expect purely forest panchayats to work satisfactorily under existing conditions and that it is only when the forest management is one of a number of other items of administration that success may be hoped for. I give this opinion as it is an independent one and not based on theoretical foundations.

(ii) Measures for improving local supplies and facilities.

51. A few wells and ponds were repaired and facilities were afforded to private parties who desired to construct or repair others.

In *Anantapur* new fuel coupes were opened where there was a demand to be met.

In *East Kurnool* small timber is cut and collected for sale at fixed rates to the public. In the same division and in *West Kurnool* "emergency coupes" are worked by Chentsus and the yield is available for the surrounding population at low rates. There is insufficient demand to absorb the yield, but as these coupes are instituted mainly with the object of providing labour for the Chentsus they are being continued.

Elsewhere the existing prescribed coupes (not always sold for lack of demand) are found sufficient.

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(iii) TIMBER TRANSIT RULES.

52. The rules for *Guntur* and *Kurnool* are reported to have worked well and no new ones have been proposed. There are no such rules in *Bellary* and *Anantapur* Only one point has been raised and that by the railway authorities in regard to the responsibility of the railway authorities under the Act. This is in correspondence with the Railway management.

(iv) JUNGLE TRIBES.

53. There are none in the *Bellary* and *Anantapur* divisions.

In *Guntur* the attempt to localize Chentsus in definite forest villages failed on account of the persuasion of the ordinary ryot population, it is reported, through their apprehension of the loss of the services of these junglemen, which they find useful in many ways, licit and illicit.

In *South Kurnool* the Chentsus are few in number and comparatively inocuous in character. They are employed as watchers and fire patrols of the Forest Department and for felling by the coupe contractors. In the other two divisions of *Kurnool* these people have given immense trouble during the past. Strong measures were taken during the period under review by a specially organized police force under Mr. W. H. Pitt, Superintendent of Police. In these operations the Local Forest Officers gave very considerable help which has been gratefully and gracefully acknowledged by Mr. Pitt.

This commendating report was specially communicated by the Conservator who requested the District Forest Officers to convey his congratulations to the officers concerned as publicly as possible. These officers have been noted for promotion.

The result of the operations was that all or nearly all the leaders and known depredators among the Chenchus (not invariably Chenchus themselves) were apprehended and incarcerated or otherwise disposed of. The hopes that this would prove a complete and immediate calmative have not altogether been justified, for since the close of the period under report a looting raid by a gang of ten or so took place.

The District Forest Officer, *West Kurnool*, is also Special Chenchu Officer.

(v) THINNING AND QUARRYING.

54. No activities on a large scale are reported. In *Bellary* the mining for manganese has ceased and the actual mineral extracted and left unremoved a couple of years back could not be sold owing to its poor quality.

In *Anantapur* prospecting licences for barytes and asbestos were granted, a general licence for prospecting for minerals over an area of 880 acres was granted in the *Guntur* division.

In *West Kurnool* three licences for mining barytes were granted for unreserved lands and 205 tons of mineral were exploited.

In *South Kurnool* a similar licence was granted but no work was done.

(vi) LIVE STOCK.

55. (*a*) *Elephants.*—Two baggage elephants are maintained in the *West Kurnool* division. Their condition is reported to be satisfactory.

(*b*) *Other animals.*—Two new bullocks were purchased in the *West Kurnool* division and there were twelve in all at the close of the period. Of these six have been declared unfit for further use by the Assistant Veterinary Inspector and will be disposed of. The five donkeys on the books of the *East Kurnool* division at the beginning of the year were sold for Rs. 35 as they are no longer required.

(vii) VETERINARY ESTABLISHMENT.

56. There is no special Forest Veterinary establishment in the Circle, the services of the officers of the Veterinary Department being called in as required.

(viii) SUITS.

57. There were no suits during the period.

(ix) CONTROL OF UNRESERVED LANDS BY THE FOREST DEPARTMENT.

58. There were no such lands under the control of the Forest Department.

BELLARY,
28*th July* 1921.

C. E. C. FISCHER,
Acting Conservator of Forests, Second Circle.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31st MARCH 1921.

THIRD CIRCLE.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

I. Alteration in area.

1. *Reserved forests.*—Owing to the redistribution of divisions on the creation of two new Circles during the year, a comparative statement of areas is impossible. *Third Circle.*

There have been slight alterations in all the divisions but *North Cuddapah*, the result on the whole being a slight decrease owing to disafforestation to provide for expansion of cultivation exceeding afforestation.

The major items were the final reservation of about three square miles in *West Cuddapah*, the disafforestation of the Duggarazpatam reserve in *Nellore* division (a former Casuarina Plantation) and of parts of three reserves in the *Chingleput* division for cultivation. In the aggregate there is a decrease for the Circle of about two square miles.

2. *Reserved lands.*—Insignificant additions were made during the period under report, owing to the notification under Section 4 of enclosures in the reserves of several districts.

A little over three square miles were removed by final reservation, mainly in *West Cuddapah* division.

2. Forest Settlement.

3. Of the 30 blocks pending settlement at the beginning of the period under report, 11, with an aggregate area of 3·2 square miles, have been finally settled.

One has been dropped as the cost of acquisition was not justified by its value from the forest point of view and 18, aggregating 11·9 square miles, are still pending.

Five new blocks aggregating ·6 square mile were taken in hand so that there were 23 blocks of an aggregate area of 12·5 square miles pending on 1st April 1921. The amount spent on acquisition was Rs. 2,866.

3. Demarcation.

4. Only one mile of new line (in the *Chittoor* district) has been cleared, but considerable progress has been made in nearly all the districts in the more permanent demarcation of boundaries previously cleared. In many cases this work is hampered by the fact that the original demarcation was wrong, which necessitates careful investigation both in the field and of the original maps and settlement records.

5. In the *Nellore* and *Chingleput* Divisions demarcation by means of trench and mound was in force until recently, but the poverty of these forests does not justify the very high expenditure and, moreover, such boundary marks are not more lasting than the normal cleared lines and cairns. The latter method has been reintroduced, therefore, nearly everywhere.

Owing to financial conditions elaborate cairns have been replaced by simple stone pillars where the absence of rock in the vicinity makes the erection of cairns a costly addition.

Third Circle.

The disafforestation of parts of reserves for the extension of cultivation and other purposes has necessitated the demarcation of new boundaries.

6. It is alleged that 5,233 miles have been cleared by forest subordinates without direct expenditure. Though, no doubt, considerable work has been done, it would be unsafe to accept the figures too confidently.

4. Forest Surveys.

7. The Survey of India Department surveyed nine reserves of an aggregate area of 72·38 square miles on the 2″ = one mile and five reserves amounting to 13·78 square miles of the 1″ = one mile scale in the *Nellore* district.

Further work in that district and also in *Cuddapah* is to be undertaken in the ensuing year.

8. (*a*) *Local surveys.*—The year's coupes, road alignments and other items of minor survey work were effected by the local forest officers and draftsmen of the District Forest offices.

(*b*) The prescribed *reference maps* have been maintained and posted for the period under report.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. Regulation of Management.

(*a*) *Preparation and control of regular working plans.*

9. In *North Cuddapah* a working plan for the whole division was under preparation and has not yet been completed.

The revision of the improvement and fuel working plan for the Kodur and Balapalli ranges of *South Cuddapah* was sanctioned during the period.

Mr. Sundaram Ayyar's working plan for the Palakonda Hills in *West Cuddapah* was submitted by the District Forest Officer just after the close of the period under report.

The revised working plan for the Nellore range of the *Nellore* district was sanctioned during the period.

No new plans were sanctioned in the other divisions.

A preliminary report for a revision of the Sriharikota reserve in the *Nellore* division was submitted to the Conservator and it will be discussed with the District Forest Officer in the field.

The proposals for the revision of the Chandragiri range working plan in the *Chittoor* division were discussed in the forests and the plan is now under preparation.

Practically all the existing working plans of the *North Vellore* division require revision. Unfortunately, this is at a moment when a District Forest Officer of four years' experience of the division is about to be transferred and is being replaced by one who does not know the forests.

2. Communications and Buildings.

(*a*) *Roads and bridges.*

10. During the nine months under report the expenditure on new works was Rs. 9,056 as against Rs. 9,479 during the preceding 12 and on repairs Rs. 10,671 against Rs. 12,768.

11. The chief items of new works were—

Construction of a cart road from Umethala to Kambampenta in the *South Cuddapah* division, for a length of nearly four miles. In *Chittoor* the Nagapatla-Bhakarapet Road was continued, but the actual length completed during the period has not been stated.

12. The *Tramway* materials at Sriharikota have been in use since 1887 with very inadequate renewals. They are used in connexion with the fuel coupes and are leased out to the lessees who purchase the coupes standing. A complete overhaul is necessary and a very large proportion of the stock will require renewal. *Third Circle.*

A complete stock-taking and preparation of an indent for new material has been ordered.

(*b*) *Rivers.*

13. No work was done or required.

(*c*) *Buildings.*

14. The cost of new buildings and the maintenance of existing ones (including the pay of watchers) during the nine months under review was Rs. 12,469 and Rs. 13,206 respectively against Rs. 26,795 and Rs. 14,958 during 1919-20.

The decrease under new works is due to retrenchment on account of financial conditions, several items having been postponed.

15. The most important new buildings constructed were—

North Cuddapah division—

(1) Subordinates' quarters of Mallepalli.
(2) Part construction of Range officer's quarters at Badvel.

South Cuddapah division—

(1) Range quarters and office at Chitvel.
(2) Reconstruction of the Bodedulabhavi rest-house which had been gutted by fire.
(3) Completion of a rest-house at Thummalabilu.
(4) Completion of subordinates' lines at Gadela and Desichettipalli.

Just before the close of the year the subordinates' lines at Papanasam were also burnt down. The two fires referred to are ascribed to malicious incendiarism by dismissed subordinates—

Nellore division—

(1) Completion of range quarters at Kavali.
(2) Beginning of subordinates' lines at Gudur.

Chingleput division—

Completion of a Range office at Sriperumbudur.

Chittoor division—

(1) Part construction of Range office at Bhakarapet.
(2) Part construction of Range office at Mamandur.
(3) Completion of the new rest-house at Mamandur.
(4) The acquisition and improvement of a circuit house at Palmaner.

North Vellore Division—

Subordinates' lines at Arungaldrug.

(*d*) *Miscellaneous.*

16. The cost for the nine months of new works and repairs was Rs. 2,165 and Rs. 460 respectively. The corresponding figures for the previous twelve months being Rs. 2,237 and Rs. 914.

The expenditure was entirely on the digging of new wells or the repairs of existing sources of water-supply.

3. Protection of Forests.

(*a*) *General protection.*

17. The total number of cases reported during the nine months under report is 6,329. In the same proportion the returns for twelve months would be 8,439 as against 6,368 for the previous twelve months or an increase of 33 per cent.

There is an increase in every division, but it is only 4 per cent in the *Chittoor* division. In that division there is an actual decrease in the cases of injury by fire (all undetected) and in unauthorized fellings. There is an increase in illicit grazing

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and an increase of over 200 per cent in miscellaneous cases. The former is probably due to the recent enhancement of the grazing fees in the district and the latter to infractions of the Timber Transit Rules which, though sanctioned late in 1919, did not come into full force till after 1st March 1920 when tannadars were firts appointed.

The increase in *North Cuddapah* (46 per cent) is stated to be due more to the fact that a number of petty cases, which would normally never be reported, were charged by subordinates anxious to show up well in the eyes of a new District Forest Officer!

No explanation is offered in *South Cuddapah* for an increase of 33 per cent, nor have the figures been analysed by the District Forest Officer so that it is not possible to state whether the increase is specific or general.

The increase of 91 per cent in the *West Cuddapah division* is stated to be due to unemployment owing to the failure of the monsoon, the better control of forest guards who have replaced watchers and to direct control of the patrol party by the District Forest Officer.

In *Nellore* the increase is 15 per cent. As it is mainly in cases of unauthorized felling, it is probably due to the unfavourable season.

The District Forest Officer, Chingleput, has not attempted any explanation for an increase of 29 per cent

In *North Vellore* there is an increase of 31 per cent which is ascribed to a special system of patrol.

18. The efficiency of the special patrols is marred and the extension crippled, however, by the fact that foresters and forest guards may not be granted travelling allowance. The members of these patrols are expected to spend several days away from their headquarters and it is clear that some extra expense, besides discomfort and sometimes danger, is incurred, and it seems unfair that they should not be reimbursed. As revenue is derived from the activities of these patrols, partly in compounding fees and partly from increased direct revenue, reasonable daily or other allowance granted would be much more than covered by the increased revenue.

A tendency towards the rescue of cattle seized is reported from *West Cuddapah.*

19. *Rewards* aggregating to Rs. 721 were disbursed to subordinates and others who gave assistance in detection.

(b) Protection from fire.

20. It is not possible to give an adequate account of the operations since the period under report terminated in the middle of the fire season and for the same reason no comparison with the previous year can be made.

Fire protection continues to be a difficult problem in the Cuddapah district and more especially in the Seshachallam Hills of the *South Cuddapah division*, which contain valuable red sanders forests. A conference on the subject was held and eventually an officer (Mr. J. S. Scott) was placed on special duty to submit definite proposals. His report on the *South Cuddapah* forests was submitted in January and after visiting the locality in March the writer of this report submitted it with remarks to the Chief Conservator after the close of the year.

21. The order of Government (last paragraph of section 9 of G.O. No. 259, dated 15th February 1921) on the forest administration report for 1919–20 was specially brought to the notice of all Collectors. Some, especially those of Chittoor (Mr. H. T. Reilly) and of Nellore (Mr. J. F. Hall), personally and by the issue of a general order to their subordinate officers, have endeavoured to give effect to the desire expressed. Admonition and advice by the Revenue Department will have much more effect than if made by the Forest Department since the officers of the latter are believed to be acting under prejudice.

22. Two large fires in the Seshachallam Hills were undoubtedly originated through the carelessness of forest subordinates when fire tracing. Another large fire near by was equally undoubtedly due to incendiarism.

In the *Chittoor district* a number of fires occurred in the Horsleykonda reserve under such conditions as can leave no doubt that they were intentional. The inspiration to burn probably arose from a desire to cause Government to desist from closing certain reserves during the driest season when there is no grass in the

forest and when the herdsmen lop and fell trees to provide browsing and also in futile revenge for the enhancement of grazing fees. Proposals have been made to still further enhance the grazing fees for this reserve as a deterrent to further incendiarism. *Third Circle.*

23. There was no change in the system of fire protection.

In the North Vellore Division as an experiment one coupe in a teak area was burnt over as early as the grass could be got to burn. (More than one attempt had to be made). It is reported that teak seedlings survived this early burning and were saved from the very much more damaging fire that *might* have occurred had the grass been allowed to dry up.

(c) Protection against cattle.

24. In the *Nellore* and *Chingleput* divisions the Kancha system was continued for the regulation of grazing and is reported to have worked well on the whole. In *Nellore* the Kanchadars in some cases have complained of the increasing closed area (worked coupes) attached to kanchas which they must protect. They are allowed to cut the grass in these areas, but, the increased growth of grass due to continuous closure offers considerable temptation to illicit grazing and to the straying of cattle, so that the duties of the kanchadars become more onerous and they have to spend more on the maintenance of fences.

The grazing fees in the *Chittoor Division* were raised during the year and this is reported to have had a marked beneficial effect on the incidence of grazing. This is so no doubt if the actual figure of cattle for which license fees were paid is accepted as the number that entered the forests, but as it has been shown that there has been an increase in the number of cases of unauthorized grazing the probability is that the decrease in incidence is more apparent than real.

In the Madanapalli Range of *Chittoor Division* seventeen reserves were closed to grazing for four months of the hot weather. The reason for this closure is that there is no grass in the forest at that time and the graziers make it a practice to lop and fell trees for fodder.

During the period the District Forest Officer, *North Vellore*, submitted a grazing scheme for a part of the division but this was returned for the further consideration of certain points.

25. There has been a proportional increase in the number of cattle impounded of about 20 per cent. This increase is in all districts except *North Cuddapah* and *Chingleput* where there are small decreases. The districts which accounted for about $\frac{3}{4}$ of the increase are *Chittoor* and *North Vellore*, in both of which special patrol parties have been at work.

26. There was little change in the area opened and closed to grazing beyond those noted above. The biggest increase was in *North Vellore*, where about 25 square miles were closed under the scheme by which catchment areas and others which it is necessary to protect are gradually being closed at the rate of four reserves a year.

(d) Protection against injuries from natural causes.

27. *Strobilanthes* (*Stenosiphonium*) is overgrowing the worked fuel areas in the Balapalli Forest of *South Cuddapah* and the adjoining Mamandur Forests in the *Chittoor Division*. The pest will have to be taken in hand as reproduction suffers to a certain extent.

The same species is coming up on areas in the Horsleykonda Reserve of the *Chittoor Division* which have been cleared of *Lantana*. It is proposed, therefore, to encourage the growth of tree species in every way, by dibbling and planting if necessary, of all areas from which lantana is removed. Rs. 1,500 were spent as the first uprootal of lantana over 200 acres in this reserve.

28. In the *Nellore district*, the growth of *Loranthus* on the Nux Vomica trees has been neglected in the past. This parasite undoubtedly diminishes the production of fruit. Orders have been issued for experimental working in order to arrive at the probable cost of extermination so that a scheme may be laid down in the pending revision of the working plan.

Third Circle.

29. In some of the fodder reserves of the *Nellore division* steps have been taken to remove prickly-pear and other useless thorny species so as to increase their productiveness in grass. These operations have cost considerably more than was estimated or intended and the matter will be enquired into at the Conservator's next visit.

30. Sambar are doing considerable damage to the stems of *Chloroxylon Swietenia* in the Balapalli forests of *South Cuddapah* and the Mamandur forests of *Chittoor*. It is difficult there to find a single stem over 3 inches in diameter from which a large proportion of the bark has not been rubbed off by these animals. This leads to unsoundness and it is rare that a single sound tree is found of even pole size. It has been ordered that this species should not be reserved when marking for improvement fellings.

31. A certain amount of climber cutting and prickly-pear clearing was done in several divisions but nothing on an organized or large scale.

Experiments are being carried out in *South Cuddapah* with a view to ascertaining whether thorny climbers can be eradicated with a solution of arsenic.

(4) Sylviculture.

(*a*) *Natural reproduction.*

32. The problem of natural regeneration continues to evade solution with most species and it appears more and more certain that concentrated artificial regeneration must be resorted to wherever the forests are to be worked commercially, with the exception of bamboo forests.

Sandal is another exception, natural reproduction being good in nearly every locality where this species has once got a footing.

In some of the *North Vellore* riverside plantations, the natural reproduction of *Inga dulcis* and of *Hardwickia binata* is reported to be very promising.

(*b*) *Artificial reproduction.*

33. There were no new regular plantations but the existing riverside plantations in *North Vellore* were tended and blanks supplied with new seedlings.

The usual more or less casual sowings were undertaken, but, with the exception of one species, with the usual lack of success, the seedlings, it is reported, in most cases succumbed during the hot weather.

The exception is sandal which seems to thrive in almost any and every locality.

The dissemination of this species is receiving special attention in the *Chittoor Division* where small areas of from 1 to 2 acres have been walled in and dibbled with sandal seeds over widespread areas. Eventually these patches will serve as centres of distribution of seeds by natural agencies—mainly birds.

(*c*) *Cultural operations.*

34. No operations coming under this head were carried out other than those mentioned above.

(d) *Operations for the improvement of the growing stock.*

35. Thirteen coupes of an aggregate area of 1,203 acres were worked in *South Cuddapah* under a system of improvement fellings with a view to the preservation and increase of red sanders. It is somewhat doubtful that any real improvement results. It is not usual for seedlings of the species to appear owing to these operations. It is true that coppice shoots spring up but the most abundant reproduction that waits upon these operations is that of thorny climbers like *Pterolobium*, *Mimosas* and *Acacias*.

A certain amount of weeding to free the better species was also carried out.

In the *Nellore Division* the Kollurpad plantation was thinned to improve the existing crop and to induce the natural regeneration of *Albizzia Lebbek*.

Improvement fellings were carried out, to favour the stock of red sanders, in two coupes in Mamandur in the *Chittoor Division* of a total area of 200 acres. A further operation required in this area is the removal of extra stems and forked stems left at the time of the first operation. *Third Circle.*

In the Palmaner Range of the same division operations were undertaken for the freeing of the tops of sandal saplings.

A similar operation was carried out in the plantations of *North Vellore.*

In all divisions the worked fuel coupes were fenced with thorns and in the *South Cuddapah* and *Chittoor divisions* some of the coupes worked under the timber improvement system were walled in.

5. Exploitation.

(*a*) *System of management.*

(i) Major Forest Produce.

36. The following statement shows the systems of management under which the forests for which working plans have been prepared are worked :—

System.	sq. miles.	Percentage.
Clear felling	1	0·11
Pure coppice	143	15·90
Coppice with standards	241	26·81
Improvement fellings	135	15·02
Not subjected to any definite system	379	42·16
Total ...	899	100

37. The greater part of the areas worked under the coppice with standards system will be converted to pure coppice as in most cases the present growing stock, the locality and the demand indicate this system as preferable.

The forests worked under the system of improvement fellings are those of *Cuddapah* and *Chittoor* in which red sanders is the principal species and those of the hill forests of *North Vellore.*

As stated later it is doubtful that this is the best method of treatment for these forests, especially the red sanders tracts.

The areas under no definite system include areas closed to grazing or reserved for grazing only.

(ii) Minor Forest Produce.

(1) *Bamboos.*

38. The bamboo blocks were leased as usual wherever demand arose.

(2) *Miscellaneous.*

39. Owing to the inquiry for nux vomica and to the present lack of organization of the collection and want of knowledge as to quantities that exist, it was decided to separate this product from all others and lease its collection separately by unit of whole divisions. The sales for the collection for 1921–24 were widely advertised throughout India, but it must be admitted that, in spite of inquiries from other provinces, the response was disappointing and the results of the sales not quite up to anticipations.

The lease is for three years, this period being adopted so that lessees on so large a scale can satisfactorily organize their collections and also to make allowance for the possibility of a bad-fruiting year. The season of 1920–21 was not a good one, there being little fruit in many localities. In the past only a fraction of the yield was collected. In many localities though the lease of nux vomica was included in the general leases of minor forest produce, the lessees did not collect the seed, the fruit being left to rot on the ground.

The rather sudden rise in price during the past two years owing, it is understood, to the wide demand for strychnine for the preparation of preventive insect poisons for use in agriculture, has stimulated interest.

Third Circle.

The rapidity of the rise is illustrated by the fact that seed collected departmentally in the *Nellore division* fetched an outside price of Rs. 30 for 500 lb. in 1918, whereas in February of 1921 Rs. 147 were realized for the same quantity and it is believed that the price has risen since.

40. On the other hand, there has been a distinct and serious fall in the demand for tanning barks. Owing to the losses sustained by the contractors who had paid large sums for the leases of collection of *Cassia auriculata* bark when there was abnormal demand, rebates of 15 per cent were sanctioned. For the same reason several contractors defaulted and considerable sums were found irrecoverable and had to be written off.

With the exception of *North Cuddapah* where a lease for two years expiring in July 1922 was granted the leases for the present have been restricted to one year and the bids have not been very satisfactory. Till the market has been stabilised the leases should be restricted to one year. The question of the period of the leases for this produce as well as the unit of area for which leases should be granted is under investigation.

The question of tanning barks is not parallel with that of nux vomica, however, since the former is used extensively locally in the tanneries found in most divisions, whereas nux vomica is either exported out of India in the raw state or converted on a commercial footing and not required locally at all.

41. Grass was exploited for hay-making by the Military Grass farms in the *North* and *West Cuddapah* divisions and in the *Chittoor* and *North Vellore* districts. One hundred and twenty-nine and 484 tons respectively were extracted from the two-first-named divisions; the two latter have not quoted separate figures. The rate of seigniorage paid to the forest department is Rs. 2 per ton. It is proposed to raise this to Rs. 2-8-0 in future as the present rate does not represent the true value.

No departmental hay-making was attempted.

Grass was removed free by villagers in most of the divisions, but in *South Cuddapah* (and eventually throughout that district) it is proposed to levy an annual fee of 8 annas on each regular grass-cutter so as to bring the collections under control in connexion with the protection of the forests from fire.

In the *Nellore district* grass may be removed from the closed areas attached to 'kanchas' in consideration of their general protection. In the Veligondas of the same *division* free removal of grass by adjoining villagers is permitted in consideration of the general protection of the forests.

Permits were issued for grazing, the collection of manure leaves, thatching grass and minerals.

(*b*) *Agency of Exploitation.*

(i) Departmental Agency.

(1) *Major Produce.*

42. There was no systematic working by departmental agency. The quantities that were collected were either for use in departmental works and when clearing boundaries.

The exceptions are—

(1) The extraction of dead or dying trees in the Kodur and other plantations.

(2) In *Nellore* the collection of fuel felled in a Srīharikōta coupe by a contractor but left lying at the expiration of the lease.

(3) The felling of two or three areas in *Chingleput* for which no sale standing had been secured.

The quantities in all these cases are insignificant.

2. *Minor Produce.*

43. With the exception of small quantities for departmental use, bamboos were extracted by lessees.

44. In the Srīharikōta Range of the *Nellore division* nux vomica, sarsaparilla roots, canes, tamarind and a few other items of lesser importance are collected departmentally by the agency of the local Yenadis.

Owing to special efforts 515 candies of 500 lb. of nux vomica were collected during the year. This is the produce of highest value and more attention was paid to this than other items. As a consequence, the collection of other items fell off somewhat, but as the difference of value is enormously in favour of nux vomica and a much greater quantity than previously was collected, the policy was undoubtedly right. *Third Circle.*

Small quantities of divi-divi pods and a few other items from the river-side plantations of *North Vellore* and small collections of *Butea Frondosa* pods and beeswax for the medical stores, in several divisions were made departmentally.

(ii) By purchasers.

45. With the small exceptions noted above the vast majority of both major and minor produce was extracted by purchasers.

(iii) Right holder and privileges.

46. There are no holders of *rights.*

In *North Cuddapah* a concession to graze cows, sheep and buffaloes free over an area of 820 acres in the Lankamallai reserve has been granted to the people of Jangalapalli and Velugalapalli.

In the same division the people of Chennapalli and Goppavarampalli are allowed to graze three hundred head of cattle in the Chennupalli reserve at the privileged rate of 1 anna per head.

In the *North Vellore* division the Malayalees were allowed to graze their cattle at a rate of 3 annas per head in the Thellai reserve which is closed to the cattle of others.

(iv) *Free grantees.*

47. Free grants of forest produce were made in most of the districts to re-build houses burnt by fire.

In the *Nellore division*, free grants were also made for the building of huts in the Kavali Criminal Settlement.

—	Timber in thousands of cubic feet.	Value.	Fuel in thousands of cubic feet.	Value.	Bamboo number in thousands.	Value.	Grass and grazing.	Other minor produce.	Total value.
		Rs.		Rs.		Rs.			Rs.
Right holders ..	..	..	..	..	..	..	136	..	136
Free grantees ..	47	7,618	..	25	25	176	219	752	8,790
Total ..	47	7,618	..	25	25	176	355	752	8,926

(c) *Outturn and sources of forest produce.*

48. In view of the redistribution of area and the change in the period of report, it is not possible to make any comparison with the past. The actual figures will be found in the appended forms and commentary would be useless.

CHAPTER III.—FINANCIAL RESULTS.

49. As the period under review is one of 9 months only no general comparison with the past year is possible. Even an analysis of the results of the 9 months can hardly be profitable since the season at which revenue and expenditure occur do not correspond closely. There was insufficient time to extract figures for similar periods and only one District Forest Officer that of the *Chittoor district* (Mr. Littlewood) has given the figures for the corresponding period of 9 months. For the sake of completeness the figures for the *Chittoor district* are quoted comparing the 9 months from July to March in 1919–20 and 1920–21 and separately the figures for other divisions.

It is not possible to make a circle average comparison since the constitution of the circle has changed.

Third Circle.

Chittoor division.

Major head.	9 months, 1919-20.	9 months, 1920-21.	Excess in favour of year.
	Rs.	Rs.	Rs.
Revenue	1,14,271	1,30,774	16,503
Expenditure.			
Expenditure A	30,679	37,093	6,414
Expenditure B	39,299	63,717	24,418
Total expenditure ..	69,978	1,00,810	30,832
Net surplus ..	44,293	29,964	—14,329

Divisions.	Revenue.		Expenditure A		Expenditure B.		Total expenditure.		Net results.	
	1919-20, 12 months.	1920-21, 9 months.	1919-20, 12 months.	1920-21, 9 months.	1919-20, 12 months.	1920-21, 9 months.	1919-20 12 months.	1920-21 9 months.	1919-20, 12 months.	1920-21, 9 months.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Cuddapah North.	48,866	35,544	24,045	14,955	43,227	39,736	67,272	54,691	—18,406	—19,147
Do. South.	50,956	30,694	37,273	27,647	55,781	53,768	93,054	81,415	—42,098	—50,721
Do. West.	95,042	65,611	37,009	19,142	43,447	43,358	80,456	62,500	+14,586	+3,111
Nellore	261,136	178,140	26,217	22,565	68,751	65,413	94,968	87,978	+166,168	+90,162
Chingleput ..	59,701	58,364	24,405	19,216	39,547	37,972	63,952	57,188	- 4.251	+1,176
Vellore North ..	133,261	107,839	24,017	14,920	34,748	32,943	58,765	47,863	+74,596	+59,976

The decreased net revenue or increased deficit in every division is due in part to the raising all round of salaries, and to the increased cost of labour and material. This is by no means compensated by the increase in the value of forest products or in the enhanced grazing fees and, as pointed out, the value of tanning bark has actually fallen considerably. Further the rebates granted on the leases of *Cassia auriculata* bark collected in previous years fell mostly on the expenditure of the 9 months under report.

In addition, in the *Nellore* and *Chingleput* districts more Kancha areas remained unsold involving a loss of revenue on the one hand and an increase in charges on the other, as extra watchers have to be entertained for the protection of such unsold areas.

50. The only further analysis possible in the circumstances detailed is for the *Chittoor division* for which the figures of the corresponding months are available. The variations in revenue from removals by departmental agency are trifling.

There is an increase of Rs. 15,400 in grazing revenue which is due to the rate having been raised from 3 to 8 annas, the actual figures being Rs. 39,325 against Rs. 23,934.

The revenue from minor forest produce fell by Rs. 4,000 owing to contractors of tanning bark having defaulted.

Under V (*a*) there is an increase of Rs. 2,100 due to higher rates of compounding fees in grazing cases, corresponding with the rise in the grazing fees.

In expenditure there is an increase of Rs. 6,414 under sub-head A and Rs. 24,400 under sub-head B. The former is due to the rise in prices and extra salary to watchers and the latter to the raising of salaries all round, including arrear payments.

CHAPTER IV—RESEARCH AND EXPERIMENTS.

51. *Red sanders.*—Several experiments to arrive at a knowledge of the sylviculture of Red sanders are in course of observation but are mostly of too recent a date to afford any conclusive information as yet. It is rather astonishing to find that so little is on record about the requirements of this important species. It would appear that the predominance of *Red sanders* in some localities is due directly to the occurrence of fire since it is more resistant than any of the woody species that it comes into competition with. On the other hand, repeated fires undoubtedly lead to eventual unsoundness, so that fire protection is necessary, but it should be accompanied by tending to assist Red sanders against its competitors.

The two observations in *South Cuddapah* detailed in last year's report were continued. It was then remarked that the experiments should 'be continued for another year to give definite results' but I consider that at least another two years from now, and probably longer, will be required to give any trustworthy information. *Third Circle.*

A similar experiment has been started during the period under report in the *Chittoor division.*

Seven plots have been laid out and will be treated as follows:—

Plot 1—to be protected against fire but otherwise left alone.

Plot 2—to be burnt over early every year and then protected for the rest of the year but otherwise left alone.

Plot 3—to be protected against fire; grass and weeds to be cut back every year.

Plot 4—to be protected against fire; grass to be uprooted in alternate strips, the others being left untouched.

Plot 5—to be protected against fire; grass to be uprooted in alternate strips and the whole plot to be sown broad cast with Redsanders seeds.

Plot 6—to be protected against fire; grass to be uprooted in alternate strips and the whole plot to be dibbled with Redsanders seeds as soon as the seeds are ripe.

Plot 7—to be treated as plot 6, but *germinated* seeds to be used.

Some minor experiments on Red sanders are also under observation in *North Cuddapah.*

52. *Sandal.*—The attempted introduction of this species in the *Nellore* division shows no great promise. As the cost is small it will be continued.

The experiment referred to last year in obtaining regeneration by root shoots in the Reddigunta reserve of the *Chittoor* division is said to be very successful and the District Forest Officer writes 'there cannot be much doubt now that sandal root shoots can and do establish themselves under such conditions'. But this had already been amply established long ago elsewhere. This indicates that there is insufficient dissemination of information and that the publication of forest intelligence requires organization.

An interesting experiment suggested by Mr. A. B. Jackson in 1919 has been carried out in the Horsleykonda reserve to verify whether sandal is perforce a semi-parasite. There being a dense growth of sandal saplings on a tank dam seated on bare rock, all other growth was removed and as the dam has been completely isolated there can be no connexion with growth beyond the dam. After two years the plants are perfectly normal. A more detailed account will be sent to "the Indian Forester" for publication.

53. *Miscellaneous.*—A few other experiments are under observation but as no results can be expected as yet, it would serve no good purpose to detail them here.

54. Experience has shown that experiments instituted by Divisional officers, however valuable the results are likely to be, generally remain under observation only so long as the officer who started them remains in the district and are neglected or lost sight of altogether thereafter. With this in view the Conservator has invited the Divisional officers to send him particulars to be recorded in an experiment register in the Conservator's office. Reports will then be called for periodically, so that the experiment will be kept alive until they have achieved its purpose.

CHAPTER V—ADMINISTRATION.

Changes in Distribution.

55. The most important change during the year was the creation of two new Conservatorships for the Presidency. This necessitated alterations in the circle charges. In consequence the old Central circle has disappeared and has been distributed partly to the Second and partly to the Third circles. The latter, which comprises the three *Cuddapah*, the *Nellore*, *Chittoor*, *North Vellore* (transferred from the former Southern circle) and *Chingleput* divisions, may be taken as the heir of the Central circle.

Third Circle.

It has been decided to remove the headquarters of the circle from the Presidency town for several reasons. Temporarily the headquarters of the Conservator are located at Chittoor though the office remains in Madras for lack of accommodation elsewhere. This arrangement has not given rise to any serious inconvenience.

Proposals for the permanent location of the headquarters were submitted after the close of the period under report.

56. The new circle was formed from the 4th February when the writer of this report assumed charge, but the three divisions of the old Central circle (Bellary, Anantapur and Guntur) were not handed over to the new Second circle till the 1st March and the North Vellore division was taken over from the old Southern Circle on the 17th February.

This redistribution and reduction in the area of the circle will enable the Conservator to exercise a much closer control (a very necessary improvement) and to become more intimate with the forests and the conditions of his charge.

The next step that is required is the subdivision of the Nellore district into two Divisional charges. A report and proposals will be made as soon as the Conservator is able to visit that district.

Re-distribution of and increase in the number of ranges is also a necessary improvement and the subject is under investigation.

57. *Health and sanitation.*—With the exception of officers whose duty takes them to the notoriously unhealthy localities the health of the establishment has been fair. In the *Chingleput* division both the health and *casualties* are reported to be 'satisfactory'.

The definitely unhealthy places are—the Mamandur forests of the *Chittoor* district, the Seshachalams of *South* and *West Cuddapah*, the Nallamalais of *North Cuddapah* and Sriharikota in the south of the *Nellore* division.

For the Seshachalams and the Nallamalais, where lower subordinates are expected to live in a number of localities scattered over a wide area, no definite sanitary measures are possible at present, but it is proposed to construct good habitations for them, clear wide belts around their dwellings and construct good draw-wells. In these areas the wells are usually accessible by steps; an obviously insanitary arrangement and particularly objectionable in localities where the *Guinea worm* is prevalent. All existing step wells must be converted into draw-wells.

58. Special measures to improve health conditions are contemplated or under execution at Mamandur.

Quarters are under construction for the ranger and his staff. It had been proposed to locate these buildings on the Parakalatippa hillock. This is an excellent site from the sanitary point of view but the situation being lonely, inside the jungle and away from all other habitation, it was pointed out at the inception of the scheme in 1918 that no ranger would willingly occupy the quarters with his family. The objection was over-ruled, and the building begun. In 1919, however, the matter being again represented, the then Conservator ordered the conversion of the proposed quarters into a rest-house and the building was completed accordingly as such. The subordinates lines constructed on the same hillock have never been occupied as residences.

The present village of Mamandur is irretrievably infected with malaria and will always form a focus of infection for the staff so long as it remains in its present location. It is proposed to move the whole village to a new site and to lay it out on a properly devised and sanitary plan and to burn out the old insanitary huts and middens.

At the same time, the noxious tank near by must be either drained or improved; the former will prove, probably, the simplest and cheapest.

The great difficulty is the water-supply as all present sources except the filthy tank referred to are apt to dry up completely during the hottest months. The other sources are two wells, the Thumbarakona river and a large tank about three-fourth of a mile north of the village, which is also a source of irrigation.

It has been proposed to construct a reservoir at a point about one and one-fourth miles from the site of the new range quarters and lead the water by a gravity pipe line close to the new site. It is hoped to be able to store a sufficient supply to carry over the hot weather. The Forest Utilisation Officer has been requested to investigate

and he has promised to visit the locality as soon as possible. Meanwhile a trial trench has been dug at the site of the proposed dam to test the sub-soil and arrive at the depth of the necessary foundations. *Third Circle.*

It was hoped that the difficulty might be solved by railing in a supply periodically in water tank trucks from Renigunta and storing water in a cistern near the railway line. The railway authorities, however, have stated that the supply at Renigunta is insufficient.

59. Sriharikota presents a different problem as there is no shortage of water. The solution here is probably the filling in of small water holes and resorting to tube wells. It is not only malaria that is to be combated here, but also the filaria of elephantiasis and blackwater fever. The question will be investigated by the Conservator at his next visit and the advice of the medical authorities will be sought. It is feared that financial stringency may preclude the early accomplishment of the scheme.

60. The casualties reported during the period are two clerks, three foresters, two forest guards, one tannadar and three fire patrols. All are said to have succumbed to malarial fever.

61. *Tours and inspections of officers—Conservator.*—Owing to several changes in the officers holding charge of the circle (old Central) and the re-distribution the number of days spent on tour by the Conservator (122 days in the nine months) was not what it would have been under normal conditions.

All the divisions were visited at least once except *North Cuddapah.*

All the Divisional offices except *Chittoor* and *North Vellore* were inspected during the period under report. Both the latter were inspected soon after.

62. *Deputation.*—Mr. J. S. Scot, Deputy Conservator of Forests, was placed on special duty to report on the measures to be adopted for the fire protection of the *Cuddapah* forests. He was engaged on this deputation from 3rd January 1921 to 15th February 1921. His report has been dealt with elsewhere.

63. *District Forest Officers.*—All officers except those of *West Cuddapah* and *Chingleput* toured for more than the proportional prescribed number of days. It is understood that the small shortage (two and four days respectively) has been made up during the three ensuing months.

64. Out of 32 ranges 12 only were inspected during the nine months under review; most of the remaining 20 have been inspected within the following three months.

65. *Audit of District Forest Office accounts.*—With the exception of *Chittoor* and *North Vellore* all the offices were audited by the Assistant Inspector of Local Fund Accounts. The results were generally satisfactory.

66. *Recruitments.*—Mr. B. K. Roy, Assistant Conservator of Forests, joined the department on 10th January and was posted for training under the orders of Mr. F. R. Madan, Deputy Conservator of Forests in the Nellore division.

67. *Vernacular Training School.*—The school was again held in the *North Cuddapah* division. It has been proposed that it should be permanently located in that division.

As the session of the school does not terminate until four months after the close of the period under consideration a detailed review will form the subject of a special report in due course.

The school opened with 30 students, but one was sent down owing to ill-health and another was dismissed for misdeeds done before joining the school and discovered afterwards.

CHAPTER VI.—GENERAL.

(i) Formation and Management of Panchayats.

68. Pending the orders of Government on the report of the officer placed on special duty early in the period under review to examine and report on the question of Forest Panchayats no material change has been effected since the last Administration Report.

Third Circle.

Two Panchayats in *West Cuddapah* were fused into one to facilitate administration.

One new panchayat was formed in the *Nellore district* and the establishment of another is under contemplation.

Two new panchayats were inaugurated in the *Chittoor* district.

With the exception of that for the Karedu reserve in the *Nellore* district, which has been reported on favourably throughout its existence, all panchayats are reported to have worked indifferently or badly. The present system of management appears to offer little hope of improvement. As the whole question is under review, however, and a new departure is under contemplation probably it will be kinder and no less profitable to draw a veil over this subject.

(ii) MEASURES FOR IMPROVING LOCAL SUPPLIES AND FACILITIES.

69. A few wells were repaired and deepened in the three *Cuddapah divisions* and in *North Vellore.*

Ryots were encouraged and given facilities to repair or make tanks or wells in reserved forests.

70. In most localities the existing fuel coupes are found sufficient, indeed, in many cases there were no offers for some of the coupes put up for auction.

In *West Cuddapah* and *Chittoor* some new coupes were marked out and worked, in the latter division with the special idea of providing fuel for jaggery boiling.

71. There is little demand for manure leaves and no special measures were required. In *Chingleput* two working circles have been formed for the supply of manure leaves; one of these was sold during the year and the other remained unworked for lack of demand.

(iii) TIMBER TRANSIT RULES.

72. It is reported that the rules have worked satisfactorily in the divisions in which they are in force and have helped materially in reducing theft. There is still considerable theft in and illicit export of sandal wood from the *Chittoor* district and more stringent rules are required. The District Forest Officer's attention has been drawn to the Sandal Wood Transit Rules recently sanctioned for the *South Kanara* district and he has been directed to submit proposals on the model of these rules.

(iv) JUNGLE TRIBES.

73. As in previous years the collection of minor forest produce in Sriharikota in the *Nellore* district was made departmentally through the Agency of the local *Yanadis.* Of late years many of these men have been driven away through the tyranny of the local Reddies or enticed away to the fuel plantations near Madras.

It is proposed to induce re-immigration in order to collect the minor produce more completely and to provide labour for the fuel coupes, which are never worked fully according to the working plan prescriptions.

The *Malayalees* of *North Vellore* are a recent addition to the circle. Proposals are being made for the better management of the forests in which they live by obtaining their co-operation.

(v) MINING AND QUARRYING.

74. The mica mining having now passed out of the control of the Forest department there is no important transaction to report under this head.

There was a little mining of soap-stone and fire-clay in one or two localities and general quarrying for metal and stone elsewhere.

(vi) LIVE-STOCK.

75. The stock of the circle was increased by $33\frac{1}{3}$ per cent by the purchase of a bullock for watering purposes at Palmaner in the *Chittoor* district. The other three members of the animal staff are made up of two buffaloes at Horsleykonda in the same district and one buffaloe at Kambakkam in the *Chingleput* district; all four are required for the same purpose.

(vii) VETERINARY ESTABLISHMENT. *Third Circle.*

76. The live-stock maintained and its general condition has demanded neither a permanent veterinary establishment nor recourse to temporary assistance.

(viii) SUITS.

77. In the Pamuleru suit referred to last year the defendant was adjudged insolvent by the District Court of *Cuddapah* and an Official Receiver has been appointed to his estate. The question of recovery of the amount due by him to Government is still under consideration.

The shrotriemdar of Putlampalli in *West Cuddapah* has appealed against the adverse decision of the District Judge to the High Court. The case is pending and so is the recovery of costs by Government.

In the *Nellore* district the Pamur estate suit referred to last year is still pending the supply of maps by the Survey of India.

The Jagirdar of the same estate has recently put in a claim to a portion of the Udayagiri Veligonda B block. The claim is pending investigation.

The appeal against the decision of the *Nellore* District Judge to the High Court by the Raja of Venkatagiri in respect of the Nandanavanam A block reserve was decided in favour of Government.

The result of the appeal of the zamindar of Bangaripaliam referred to last year is still awaited.

(ix) CONTROL OF UNRESERVED LANDS BY THE FOREST DEPARTMENT.

78. The only lands coming under this classification are the Meyyur plantation and the Walajabad tope in the *Chingleput* district both of which are leased to Forest panchayats.

C. E. C. FISCHER,
Acting Conservator of Forests, Third Circle.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1921.

FOURTH CIRCLE.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

I. Alteration in Area.

Reserved forests and reserved lands.—The area of reserved forests in the Circle as at present constituted decreased from 2,727 square miles to 2,711 square miles, chiefly owing to the transfer of the Forests in the Tanjore district to the control of the Collector, and the area under reserved lands increased from 43 to 44 square miles; thus the department had control over an area of 2,755 square miles at the close of the year. *Fourth Circle.*

II. Forest Settlement.

2. The reservation of two small blocks of an area of 0·28 square mile took effect during the year.

III. Demarcation.

3. Three miles of boundaries in South Salem division were finally demarcated, leaving 48 out of 5,173 miles yet to be done.

IV. Forest Surveys.

(a) By the Survey of India Party.

4 No survey was undertaken.

(b) By Madras Survey.

5. Work in connexion with the Revenue resurvey was completed in the Tiruvannamalai and Gingee ranges of South Vellore division; the outer boundaries of the reserves in Kallakurichi, Tirukoilur and Vriddhachalam taluks in East Salem were surveyed; while in South Salem, the party was engaged in the survey of the Class V Forests in the Musiri taluk.

(c) By Departmental Survey.

6. Coupe surveys were carried out departmentally in all divisions.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

I. Regulation of Management.

Preparation and control of regular working plans.

7. *Preparation.*—No working plan was sanctioned during the year.

The working plan for the Class II Forests of Gingee range has not reached this office and the proposals are apparently under revision by the District Forest Officer, South Vellore, to whose control Gingee range has now been transferred. The working plan for the Reserved Forests of Udayarpalayam taluk, which was submitted

Fourth Circle.

to the Chief Conservator during the year, was not sanctioned pending decision as to the formation of the additional range proposed in the working plan. The revised working plan for bamboo areas in the West Vellore division has not yet been received. In East Salem the working-plan for Chitteri South-west Working Circle was revised during the year and Chief Conservator's sanction obtained after the close of the year. A revised scheme for bamboos in Chitteri North-West Working Circle is under consideration.

8. *Control.*—The prescriptions of the sandalwood working plans for the Javadi Hills and Hosur were generally followed except in areas affected by spike, as also the working plan for the working of bamboos and minor forest produce in South Vellore division. The other working plans relating to fuel areas are more or less obsolete and reqtire revision.

II. Communications and Buildings.

(*a*) *Roads and Bridges.*

9. The chief road works in progress are those carried out by the Forest Engineer on the Javadi Hills of North Arcot district.

The *Amerdi-Nadanur* road is almost completed, and the amount spent during the year was Rs. 87,161.

Komattiyeri-Patrakad road.—Earthwork, with the exception of some blasting in the second section of the road and the masonry works in the first section of 5 miles of the road, are completed and masonry works in the second section are in progress. The amount spent during the year was Rs. 49,165.

The alignment of the road from *Komattiyeri to Kuttathur* was completed and the estimate is under preparation.

Some minor works were undertaken in South Salem division, viz., the completion of the cart track for about 2 miles connecting Mavar reserve with Mavar village on the Kollimalais, improving the road from Mavar to Thammampatti and metalling of the cart-track about 4 miles from Kalappanaickenpatti to Nadukombai. There was no work in the other divisions.

(*b*) *Buildings.*

10. The following buildings were completed during the year :—

(1) Rest-house with out-houses at Valappur on the Kollimalais of South Salem.

(2) Subordinates' quarters at Nellivasal on the Javadis of West Vellore.

(3) Sandalwood godowns at Devarbetta and Melkuppachinnanur in North Salem and South Vellore respectively.

III. Protection of Forests.

(*a*) *General protection.*

11. The following statement shows the offences registered during the year under the various heads :—

	1920-21.	Proportionate number for the corresponding period of 1919-20.
	NO.	NO.
Injury to forest by fire	129	183
Unauthorized grazing	1,224	1,014
Unauthorized felling	4,975	4,310
Other offences	147	110
Total ...	6,475	5,617

Compared with the previous year there is an increase under unauthorized grazing and fellings and a decrease under injury by fire. The increase under grazing and fellings is attributed to the introduction of the patrol system in South Vellore,

Central Salem and South Salem. The panchayatdars under the "forest village system" in Tiruvannāmalai range of South Vellore division are reported to have taken great interest in the protection of grazing blocks entrusted to them and to have brought to book a large number of offenders. The decrease under cases relating to fire is due to the fact that the period under report does not cover much of the dangerous part of the fire season, viz., April to June. *Fourth Circle.*

Cases brought to trial.

Year.	Number.	Convictions.	Acquittals.	Percentage of failure.
1919-20 (one year)	2,113	2,027	86	4·07
1920-21 (nine months)	1,834	1,768	66	3·59

The number of cases brought to trial, viz., 1,834 for nine months is higher than the proportionate number for the corresponding period of last year 1,585 and seems partly due to the lenient punishments inflicted by certain Magistrates in South Arcot and Salem districts. The Collector of South Arcot attributes this partly to incompetence on the part of his Sub-Magistrates and partly to the fact that frequent transfers prevent his Subdivisional Magistrates getting a grasp of the situation and also partly to limited jail accommodation.

12. A sum of Rs. 39,603 was collected as compounding fees during the year. The instructions issued in G.O. No. 1990, Revenue, dated 13th June 1910, were generally followed in fixing compounding fees in grazing cases.

Patrol system.

13. *South Salem.*—The results achieved under the patrol system during the year are encouraging especially in the matter of putting down illicit removal of manure leaf in the district, the revenue under which item rose from about Rs. 2,400 in 1918-19 and Rs. 4,200 in 1919-20 to Rs. 15,800 in the present year.

Central Salem.—This was reintroduced during the year as an experimental measure as the protection of reserves round Salem and some other places was bad and is said to have given some results.

South Vellore.—This was tried in the Gingee range and the result was on the whole satisfactory.

East Salem.—This system was tried in Atur range during the green-leaf manure season and the results are reported to be far from satisfactory owing apparently to the wrong men having been put in charge of the patrols.

REWARDS.

14. A sum of Rs. 366 was distributed as rewards in South Salem, South and West Vellore divisions in connexion with offences relating to sandalwood and goat browsing.

(*b*) *Protection from fire.*

15. The period covered by this report so far as it relates to fire protection is the Calendar year (1920), so no real comparison is possible.

Special protection.—The area under special protection was 1,101 square miles and the area burnt was 10·60 square miles, the percentage of failure being 0·96.

16. *General protection.*—The area under general protection was 1,586 square miles and the area burnt was 10·59 square miles, the percentage of failure being 0·67.

The result of both special and general protection compare favourably with those of previous years but this is due to a favourable fire season.

Appendix A shows details and origin of fires.

(*c*) *Protection from cattle.*

Fourth Circle.

17. The number of cattle impounded shows an increase in South Vellore, Central Salem and East Salem divisions. The increase is due to the successful working of patrol system, to the vigilance exercised by the subordinates and to the interest taken by the panchayatdars in the Tiruvannamalai range.

Details are given in Appendix B.

The incidence of grazing fell during the period under report from 4·68 to 5·20 acres per cow unit and this is doubtfully due to the enhanced rate of grazing fees prevalent in all the divisions as in one range at any rate, there was negligence in the issue of permits.

(*d*) *Protection against injuries from natural causes.*

18. *Prickly-pear.*—About 115 acres in a coupe XVII in Morappur reserved forest in the East Salem division were cleared at a cost of Rs. 192.

The regrowth in the plateau and the Upper Slopes of the Chitteris were cleared within their respective village limits by the Malayalees free of cost.

Lantana.—The plant seems to be getting acclimatized even on the plains. It was uprooted by the Malayalees wherever met with, within the sandalwood areas in South Vellore; in West Vellore, eradication was continued in Chengam range over an area of 260 acres; in North Salem, only an area of 44 acres was cleared and no information is given as to the result of the operations in previous years; in South Salem, the pest is reported to be spreading in the unreserves on the Pachamalais.

Creeper cutting.—This was undertaken in all sandal areas.

Loranthus.—Loranthus is reported to have interfered with young sandal trees in Karavalli reserved forest on the Namakkal-Kollimalais, causing the death of the trees, but as a rule is not common.

Bison and Sambhur.—These are doing much damage to the young sandal saplings in West and South Vellore divisions and also to other species planted in the Amerdi plantation in South Vellore.

4. SYLVICULTURE.

(*a*) *Natural reproduction.*

19. *Sandal.*—Natural reproduction of sandal is fair throughout. In the Tirupatur-Javadis of West Vellore division, seedlings that came up after the rains did not survive the summer except those under the shelter of bamboo clumps. The seeding of the sandal in West Vellore is reported to be poor.

20. *Bamboos.*—*Bambusa arundinacea* flowered universally and regeneration is plentiful.

Hardwickia binata.—Regeneration of "acha" in North Salem is satisfactory. Coppice regeneration in the fuel coupes is, as usual, good. Regeneration of *Butea frondosa* in Elavambadi and Kallavi reserves, of *Chloroxylon swietenia* in Morappur reserve, of *Acacia leucophloea* in Ammapalayam, of *Mallotus philipinensis* in Nochikuttai and its extension and of *Acacia ferruginea* in Thumbal and its extension is reported to be specially noteworthy in East Salem as they form fine patches of 'seedling crops' (*sic*) in the area.

General.—It is almost certain that the reports under this head refer really to advance growth and not to the regeneration of the year.

(*b*) *Artificial reproduction.*

21. The only regular plantation in the circle is at Amerdi in the South Vellore division. Twenty acres were planted with *teak*, *sissoo*, *red sanders*, *Hardwickia binata* and *Terminalia tomentosa*. Seeds of *Cedrela Toona* and *Gmelina Arborea* were also sown. The result is the same as in the previous years. Transplants did not fare well generally—only 50 per cent is expected to prove successful. Only *Dalbergia sissoo* has established itself well; also *red sanders* in the elevated localities. No fresh area was cleared for planting during the next year as the operations are proposed to be carried out in the blanks covering about 25 acres in the previous plantations.

Taungya plantation.—The only plantation under the head is the small area of 6 acres in Pakkam reserve where teak has been put out in a locality which does not suit it. Another plot of 2 acres was sown with 29½ measures of teak seeds in pits along with the castor seeds sown in between the lines of teak. The germination is said to be good, but the shade of the castor is reported to interfere with the growth of the teak plant. The District Forest Officer proposes to substitute other suitable species and introduce bamboos along the bank of streams. *Fourth Circle.*

Cultural operations.—Regeneration operations in sandal areas were undertaken, but the general result of sandal *sowing* is a failure all over the circle. In some cases this is due to late sowing, in others, and more often, the seeds are eaten by rodents and only a few of the survivors have been unable to survive the hot weather. It is proposed to treat the seeds with red lead in future.

(c) Operations for improvement of the growing stock.

22. Tending was undertaken in all the sandal coupes; cutting of climbers and creepers was also undertaken generally when marking standards.

Improvement fellings involving cutting back of hollow, crooked and useless species interfering with the growth of better species were undertaken in West Vellore division in four coupes, viz., Poongulam coupe III, Chelkal coupe III, Kottur coupe III and Mambakkam coupe I at a cost of Rs. 222. The area gone over is 110 acres, the number of trees extracted being 772. In the East Salem division, improvement works such as cutting of creepers, girdling of inferior species and cutting back ill-grown trees were undertaken over an extent of 600 acres in coupe II of Tagarai Hill Timber Working Circle, XXV Tagarai South Working Circle and coupe XX of Kanai Working Circle of Kallakurchi range at a cost of Rs. 208. It is probable that the removal of nothing but dead material and creepers from these areas is all that should be done.

V. Exploitation.

(a) System of Management.

23. The total area under working-plan during the period was 1,794 square miles and various sylvicultural systems in force are detailed below :—

	Area in square miles.	Percentage to the total area under Working-plan.
Clear fellings	2 *	0·11
Simple coppice	109	6·07
Coppice with standards	789	43·98
Selection fellings	272	15·16
Improvement fellings	332	18·51
Pastoral methods	207	11·54
Forests for which working-plans have been prepared but are not subject to any definite system of working.	83	4·63
Total ...	1,794	100·00

* Area cleared to be disafforested.

(b) Exploitation by departmental agency.

24. The chief item of departmental extraction was sandalwood. A quantity of 237 tons was sold against 281 tons in the previous year, the average rate being Rs. 1,595 per ton against Rs. 1,402 in the last year and against Rs. 1,418 in the year previous to the last. One of the Mysore Government representatives again attended our sales.

Minor forest produce.—About 296 quarters of tamarind, 28 quarters of lichens and also certain other petty items were collected departmentally from some of the unsold areas in Denkanikota range. These together with the stock collected in the previous year comprising chiefly seeds of *Cassia tora*, gallnuts, lichens, *Pongamia* seeds, tamarind, honey and wax were sold for Rs. 1,090, the cost of collection being Rs. 435.

Fourth Circle.

Hay.—Out of Rs. 6,208 due from the Military Department on account of supplies made last year Rs. 5,944 was collected during the period; the balance is pending settlement of some differences in the weight acknowledged.

Manure leaves.—An experimental manure leaf plot was opened in Jadayagounden reserved forest of Atur Range, East Salem Division. A plot of 20 acres was worked. Five hundred and twenty head loads or 260 cwts. were extracted at a cost of Rs. 79 of which 220½ cwts. were sold for Rs. 84.

(*c*) *Exploitation by purchasers.*

25. *Timber fuel and bamboos.*—No comparison between the figures for the nine months under report and those of the corresponding period of last year has been found possible as the latter are not available consequent on the readjustment of all the Divisions in the Circle.

Grazing.—Of the total area of reserved forests and reserved lands, 87·47 per cent was open to grazing against 88·51 in the previous year. The incidence of grazing in the several districts of the Circle is given below :—

Divisions.	Acres.	Cow units.	Number of acres per cow unit.
South Vellore	259,200	71,748	3·61
West Vellore	235,520	57,000	4·13
East Salem	306,560	43,061*	7·12
North Salem	302,080	32,770	9·22
Central Salem	240,000	55,152	4·35
South Salem	198,400	36,718	5·40
Total ..	1,541,760	296,439	5·20

1 buffalo = 2 cows = 4 sheep.

* Does not include cattle under the forest village system in Chitteri and Atur Ranges.

The number of cattle grazed during the year shows a reduction of 44,596 cow units and the area open to grazing a decrease of 26,875 acres. The decrease in the number of cattle is attributed to the increased rates for grazing fees generally and to the heavy mortality of cattle in Salem district. The decrease in area is chiefly due to the elimination of areas relating to Tanjore forests and to the area disafforested in *South Vellore*. The number of animals permitted to graze was 341,597 against 386,549 in the previous year. The revenue from grazing was Rs. 164,231 against Rs. 1,60,476 in the previous year. The increase is small.

Minor produce.—The value of minor produce leased out during the year was Rs. 1,34,864. There was a considerable decrease in the amount realized for tanning barks.

(*d*) *Exploitation by right-holders.*

26. The rights admitted at Settlement in *Trichinopoly* (*South Salem*) are reported to have not been availed of during the year.

(*e*) *Exploitation of free grantees.*

27. The quantity and value of produce removed under the head was as follows :—

—	Timber in thousands of cubic feet.	Value.	Fuel.		Bamboo. Value.	Grazing.	Other minor forest produce.	Total.
			In thousands of cubic feet.	Value.				
		Rs.		Rs.	Rs.	Rs.	Rs.	Rs.
Right holders	..	..	..	..	..	..	..	..
Free grantees	17	1,753	1	78	13	..	..	1,844
Grants at reduced rates	..	..	..	..	..	..	..	..
Total ..	..	1,753	..	78	13	..	..	1,844

CHAPTER III.—FINANCIAL RESULTS.

28. The following statement compares the financial results of the period under report with that of the corresponding period of last year :— *Fourth Circle.*

	1920-21— 1st July 1920 to 31st March 1921.	1919-20— 1st July 1919 to 31st March 1920.
	Rs.	Rs.
Revenue	9,73,747	9,88,880
Expenditure.		
A. Conservancy and Works including refunds ...	2,24,431	2,28,841
B. Establishment	3,01,088	2,31,287
Total expenditure ...	5,25,519	4,60,128
Surplus ...	4,48,228	5,28,752

The revenue remained practically the same during the two periods, the decrease being only Rs. 19,268. The same applies to the expenditure under A. Conservancy and Works, the decrease being Rs. 4,463. The expenditure under B. Establishment increased by Rs. 69,803 due to the grant of temporary additions of pay to the subordinates.

Under revenue 57·72 per cent was from major produce; 37·58 per cent from minor produce and 4·70 per cent from miscellaneous items.

Under expenditure 7·09 per cent was on exploitation; 45·21 per cent was on upkeep and improvement of forests, and 47·70 per cent on other miscellaneous items.

The important variations are explained below :—

Receipts.

(i) *By departmental agency.*

Sandalwood.—Rupees 50,151. The quantity of sandalwoodsold during the year was 44 tons less than in the previous year. The decrease is due to the fact that about 15 tons in *West Vellore* did not reach the sale depot in time for the sale and to the poor yield in *East Salem* Division where the second rotation of working has commenced on the Chitteri hills.

Minor produce. + Rs. 4,915. The value of hay sold during last year was adjusted during the current year; also minor forest produce collected in North Salem last year was sold during the year.

(ii) *By purchasers.*

Fuel. + Rs. 99,968. The increase is chiefly due to the realization in East Salem of the value of land and growth in 'Class IV' reserves of old Cuddalore range.

Bamboos. —24,964. This is chiefly in Salem divisions due to fall in prices consequent on the flowering of bamboos.

Minor produce. —54,433. Due to very low prices realized for barks consequent on the slackness in the hide trade.

Miscellaneous. V (*a*) + Rs. 8,870. The increase is due to larger amount of compounding fees realized in South Vellore and South Salem.

V (*b*)—Rs. 13,290. The decrease is due to the transfer to the correct heads of amounts credited to this head in East Salem in the previous year.

Expenditure.

A. Conservancy and Works.

The chief variations are an increase of Rs. 50,000 under A-VII (*a*) which represents expenditure by the Forest Engineer on the road works in the Javadis and the credit to A-VIII (*b*) of Rs. 20,000 by recovery of the amount adjusted last year as compensation for the Tirumalavadi mitta in North Salem.

B. Establishment.

The increase is explained at the commencement of this chapter.

CHAPTER IV.—RESEARCH AND EXPERIMENTS.

Fourth Circle.

29. *Sandal.*—Ranger P. A. Krishnaswami Mudaliyar continued on special duty till the end of the year recording notes on the areas under special observation in the North Salem division in connexion with spike disease—his notes were irregular and his reports when not confined to facts were full of theories for which he was quite unable to produce any evidence. Briefly, it may be stated that there has been no recrudescence of spike in the area in the southern part of the Thalli reserve which was cleared of both *Zizyphus Oenoplia* and sandal in 1914 and 1915, and till the end of the year the same has been the case at Mukkankere and Nelkunthi where the diseased sandal alone has been taken out in 1920-21, but the disease is spreading towards Mukkankere from the Ojjanhatti area which we are clearing of spiked trees as quickly as we can—they run however to thousands and labour is somewhat scarce. The above are all in North Salem.

In West Vellore at Nellivasal, a year after the last lot of spiked trees was removed, there has been one fresh tree attacked in September 1920 and the tree has been uprooted, and the area is being carefully watched. It was here that Mr. P. M. Lushington caught an attack just starting and directed the removal of spiked sandal and all *Zizyphus Oenoplia*, *Cipadessa fruticosa*, *Dodonaea viscosa* and *Argyreia cuneata* in 1917.

As regards spread of the disease, the observation areas show that up to 31st March 1921, out of 444 sandal enumerated in the Jowlagiri bungalow observation area 392 have shown spike and 205 are dead—similar figures for the "Cairn 53" area are 512 enumerated, 148 spiked and 55 dead (of which 47 at least were spiked trees).

So far no sandal known to have been "spiked" has been alleged to recover except one tree (No. 45 of "Cairn 53" area) which is now healthy, but which no gazetted officer saw diseased.

The experiments to see whether sandal is an obligate parasite, have been continued in South and West Vellore. In the case of the trees trenched near Komattiyeri, they show no difference from their neighbours. It is possible that the trenches here are not deep enough in view of what is noted later about seedlings. At Melpat where four trees are under observation, the report states "three are pronounced to have no healthy appearance and the remaining one is fairly healthy."

It was found that the experiments with seedlings at Komattiyeri were vitiated by the fact that the protective hedge of *Jatropha curcas* and a *Nux vomica* tree growing close by had sent their roots under the trench and had been parasitized, the trench has since been deepened and the roots removed.

Myrobolans.—Specimens of varieties have been sent to the Imperial Forest Botanist for identification from East Salem.

30. *Yield of leaf manure.*—An experimental cutting over 20 acres in East Salem gave an outturn of 520 head loads of 56 lbs. each; this is enough to manure about 5 acres of rice land; it is doubtful if the results are worth much as it was reported that there was difficulty in selling the produce, amongst other reasons, because it contained thorns which are never taken by the ryots as the leaves are generally trodden into the fields with bare feet.

CHAPTER V.—ADMINISTRATION.

31. The following changes took effect during the year:—

(1) Consequent on the creation of two additional forest circles in the Presidency, North Vellore division was transferred to the new Third Circle and Madura and Tinnevelly to the new Fifth Circle, but the financial control relating to the transferred districts remained with the writer of this report up to 31st March 1921.

(2) A rearrangement of all the divisional charges came into effect on 1st July 1920; the new and old charges affected are detailed below:

Old.	Forest area in square miles	New.	Forest area in square miles.
North Salem	837	North Salem	521
South Salem	559	Central Salem	412
Trichinopoly	310	South Salem	339
West Vellore	328	West Vellore	383
South Vellore	417	South Vellore	483
South Arcot	275	East Salem	589

The Cuddalore Range charge was abolished with effect from 1st March 1921. *Fourth Circle.*—The charge of the circle was held by the following officers during the year under report:

Mr. B. F. Rigold	...	1st July 1920	to	17th October	1920
Mr. H. C. Bennett	...	18th October ,,	to	25th ,,	,,
Mr. J. S. Scot ...	...	26th ,, ,,	to	4th November	,,
Mr. H. A. Latham	...	5th November,,	to	31st March	1921

32. *Tours.*—The touring of the District Forest Officers, South and West Vellore and Central Salem, fell short of the minimum, while that of the remaining District Forest Officers exceeded the minimum. The short touring is chiefly due to the change of the period of the administration report from the forest to the financial year.

33. *Inspections—By Conservator—office.*—East Salem District Forest office was the only office inspected during the year and the result was satisfactory. North Salem and West Vellore offices were inspected after the close of the year.

Forests.—After the writer took charge of the circle on return from leave, he inspected the forests in the North Vellore division in November and December 1920 and a portion of the Pachamalais in the South Salem division in January 1921, and some of the forests in the Shevaroys West and Cauvery Ranges in the Central Salem division and the forests in the North Salem division in February and March 1921. Inspection notes were written and submitted to the Chief Conservator in respect of his inspections for North Vellore, Central and North Salem divisions.

By District Forest Officers.—None of the Range offices were inspected during the year as these inspections were usually done towards the end of the old forest year. Instructions had been issued to them to spread over the inspections over the year, but perhaps not in time for effect to be given to them.

The sandal sale depot at Vellore was inspected by the District Forest Officer, South Vellore, during the year while that at Tiruppatur was done after the year. None of the District Forest Officers except West Vellore, inspected the sandal "*forest*" depots when the operations were going on; the need for such inspections was pointed out to them at the end of February 1921.

34. *Audit of accounts by the Itinerating staff of the Accountant-General's office.*—The accounts of the West Vellore and South Salem divisions were audited during the period under report and the results were pronounced to be satisfactory. The accounts of East, Central and North Salem divisions were audited after the close of the year.

35. *Vernacular Training School.*—The school commenced work on 1st February 1921 with 29 students (5 Foresters and 24 guards) in the North Salem division under the charge of Ranger C. H. Ashe, who had to proceed to Coonoor for anti-rabic treatment on the 7th February. Ranger Salisbury took charge of the school on 21st February 1921; T. Kesavalu Nayudu, the Assistant Instructor, holding charge in the interim. The Assistant Instructor T. Kesavalu Nayudu was obliged to go on sick leave from 24th February 1921 to 25th March 1921 and during his absence Supernumerary Ranger K. R. Subramanian acted as Assistant Instructor from 8th March 1921.

The Conservator inspected the school while at work in March 1921.

36. *Health of the establishment including an account of the measures to improve sanitation, and casualties.*—(*a*) The circle, as at present constituted, consists mostly ranges of hills which are notoriously malarious especially in the hot weather and the health of the establishment has been far from satisfactory involving much dislocation of work.

(*b*) *Sanitation.*—The Government have sanctioned as an experiment the proposal of the District Forest Officer, South Vellore, to advance Rs. 720 to 24 Foresters (recoverable in 12 instalments) for the purchase of camp cots with mosquito curtains and steps are being taken for their purchase and supply.

Casualties.—Malaria levied its usual toll during the period under report, the victims being one forester, one range clerk, five guards and three watchers. A Forest Guard is reported to be missing in Chengam range, West Vellore division, and rumour has it that he has been murdered on account of the enmity that existed between him and the villagers consequent on his detection of offences against them. Investigation by the Police is said to have given no results, but no formal report on the matter has been received yet.

Fourth Circle.

CHAPTER VI.—GENERAL.

(1) Formation of, and management by, panchayats (to include Forest Village system).

(a) *Formation and Management of Panchayats.*

37. *Formation.*—Panchayats are at work in all the divisions of the circle except in North Salem and West Vellore. In South Vellore, three new panchayats were formed for the Poomalai reserve during the period under report.

Management.—Except in the Tiruvannāmalai Range in South Vellore Division, the panchayatdars appear as a rule to neglect their duty, and illicit removals of firewood and manure leaf are common as also in some places goat browsing. More personal attention from the Revenue Divisional Officers and Tahsildars appears to be required before the Panchayatdars will attend to what is required of them. It is believed that the special officer appointed last year to enquire into the working of such areas has reported, but no orders on the matter have been received.

(b) *Forest Village System.*

The Forest Village system sanctioned for the Tiruvannāmalai Range in South Vellore division is giving good results. The protection of the village grazing blocks is improving and the ryots appreciate the system.

38. (2) *Measures for improving local supplies and facilities for obtaining Forest Produce—include water-supply, fuel, manure leaves, etc.*

(a) Improvement of water-supply in State Forests.

(1) *Boring operations.*

In South Vellore, no work was done during the period under report beyond fitting the bore hole at Veerappanur with a pump.

In West Vellore, the tube well at Kavalur has not been completed and the lining of the pipe and the setting up of the installation are still in progress.

Fresh operations in this direction have, for the present, been suspended as ordered in Chief Conservator's Proceedings No. 353, Routine, dated 10th March 1921.

(2) As regards improvement of water-supply in grazing grounds, it is reported that no measures were found necessary in South and West Vellore or in the East and South Salem divisions. In Central and North Salem divisions, where it is reported, that steps are needed, no operations were undertaken during the period under report owing to want of funds. In East Salem division, general permission was given to graziers to take the cattle to the neighbouring reserves or grazing blocks for watering purposes. Five bunds were constructed during the year in Kuttady reserve more however with a view to prevent erosion than to hold up water. In Karungal reserve, Chitteri Range, where 372 bunds have already been constructed these are said to "hold up water for a while". Separate reports received from the District Forest officers in this connexion were considered and it does not appear that anything appreciable can be done to improve the hot weather water-supplies at anything like a reasonable cost.

It is reported from the South Salem division that the panchayatdars of Puliyur reserve, constructed a tank 36′ × 32′ × 16′ at a cost of Rs. 300 within the reserve and that the tank was full of water.

39. (*b*) *The supply of forest produce to meet the wants of the people* was, as usual, attended to by coupe contractors. The District Forest Officer, South Vellore, reports that the action on the part of the Co-operative Department in Tiruvannāmalai in working some of the coupes actually reduced the price of fuel in that town. The price of fuel in Salem town rose during the year owing to shortage in the supply of wagons by the South Indian Railway and increase in freight charges, but is still not so expensive as in Madura and Trichinopoly.

40. (*c*) *Supply of manure leaves.*—No operations were undertaken to encourage the growth of manure leaf species.

Fourth Circle.

The experiment referred to in the last year's report to test the yield of manure leaf per acre was started in an area of about 63 acres in the Jadayagounden reserve of Atur range, East Salem division, the area being divided into three plots, the first of which 20 acres in extent was worked over and gave an outturn of 520 head loads equivalent to $1\frac{1}{4}$ cart loads per acre. One acre of wet cultivation apparently requires six to seven cart loads of leaf manure, so, five acres of forest growth will have to be sacrificed for each acre of wet cultivation and there is nothing like that area of reserved forest to provide leaf.

In South Salem division as a result of closer and stricter supervision over reserves closed to manure leaves by the employment of patrol gangs consisting of reliable and honest subordinates, the stealthy removal from reserves was reduced and the ryots along the foot of the Pachamalais are reported to have used cumbu and cholam stalks as a substitute for green leaf manure. The Agricultural Department was addressed by the District Forest Officer after the close of the year and the officers of that department have kindly consented to tour in the localities affected, with a view to instruct and advise the ryots.

It is quite possible that artificial manures combined with such materials as the cholam and cumbu stalks and perhaps old cotton stems would suit the rice cultivation.

41. (3) *Timber and sandalwood transit rules.*—There are no timber transit rules in force in this circle. There has been no change in the sandalwood transit rules.

42. (4) *Jungle tribes.*—The Malayalee hill village system continued to work well on the Chitteris in the East Salem division and on the Javadis of the South Vellore division and on the Javadis of the Chengam range and on the Yelagiris of Alangayam range in the West Vellore division, while in the Tiruppattūr range the Malayalees withdrew with a few exceptions; some of these appear to have realized that they lose by doing so and have expressed a desire to join in again. The papers show that it is costing them nearly Rs. 1,400 per annum and a good deal of inconvenience.

In South Vellore, a Malayalee who was caught red-handed stealing sandalwood was prosecuted and sentenced to pay a fine of Rs. 30. It is also reported that the Malayalees have used the knives, which they were allowed to carry to cut creepers and climbers, for lopping the top of branches of the bamboos to feed their cattle with in the summer, and that warnings and fines have not produced any marked effect.

During the period under report, the District Forest Officer, South Vellore, realizing that many of the Malayalees were paying usurious interest and were deeply in debt has tried to establish a Co-operative Society which was registered at Komattiyeri through the assistance of the Co-operative Department, and it is hoped that its activities will improve their condition by the purchase of their produce and the sale to them of articles they do not produce themselves.

Steps were also taken in that division to send the vaccinators to the hills and hundreds of Malayalees are reported to have been treated with the result that smallpox which levied a heavy toll in 1919-20 did not play such havoc among them.

In the South Salem division, the Malayalees on the Namakkal-Kollimalais were allowed the exclusive right to graze their cattle in the reserves, and a portion of the grazing fees collected from them was refunded in return for the fairly good protection afforded by them to the forests.

43. (5) *Mining and quarrying.*—A licence was issued by the Collecter of North Arcot to Messrs. Gaudart & Co. of Pondicherry to prospect for metals, such as gold, copper and other minerals, except those reserved under the mining rules, in the Ponniar reserved forest in West Vellore division and an application by the same company for a mining lease for iron ore in Kanjamalai reserved forest in Central Salem division is under correspondence.

44. (8) *Civil suits—East Salem.*—The appeal against the judgment in the law suit between the department and the mittadar of Sekkadipatti regarding the ownership of the Neyyamalai hill adjoining Pungamaduvu reserve was decided in favour of the mittadar.

Fourth Circle.

The appeal preferred by the claimants of Arana and Tirthagiri blocks against the decision of the Forest Settlement Officer, which was pending in the District Court, Salem, was decided against Government.

45. (9) *Control of unreserved lands by the Forest Department.*—The Land Revenue Administration of Javadi Hill villages in the Tiruppatur taluk continued under the District Forest Officer, West Vellore, and the Collector states that the administration is satisfactory and recommends its continuance for another year from 15th September 1920. The total land revenue collection during the period under report was Rs. 4,158-2-4 against Rs. 4,140-14-2 in the previous year.

The unreserves on the Pachamalais and Kollimalais continued to remain under the partial control of the Forest Department; it has since been decided that the control over these unreserves by the Revenue Department should be left undisturbed.

H. A. LATHAM,
Conservator of Forests, Fourth Circle.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1921.

FIFTH CIRCLE

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. ALTERATION IN AREA.

1. *Reserved forests.*—There is only a slight alteration in area; 169 acres in *North Coimbatore* and 3 acres in *Madura* were disafforested. *Fifth Circle.*

2. *Reserved lands.*—No change.

2. FOREST SETTLEMENT.

3. The settlement of the four blocks in *Tinnevelly* district shown as pending in the last report has not been completed. A notification under section 4 of the Forest Act was published for the formal extinction of the eight unlocated rights which escaped notice at settlement in Guttialathur reserve of *North Coimbatore* district and the settlement of these rights was done by the Revenue Divisional Officer, Gobichettipalayam, but his final report has not been received.

3. DEMARCATION.

4. Twenty-seven miles of new boundaries were demarcated in *Kollegal* district at a cost of Rs. 640 and a small length (half a mile) in *Madura* district at a cost of Rs. 99.

In *Kollegal*, eight miles of old boundaries were repaired. In *Madura*, the demarcation of the common boundaries between the zamin and state forests, and of the enclosures in certain reserves were carried out. In *Tinnevelly*, the demarcation of Kalakad-Singampatti boundary commenced last year is still in progress; while the outer boundary of an estate in a reserved forest was cleared to a distance of one mile and two furlongs.

5. The usual reclearing of boundaries by subordinates free of cost was carried out in all the districts. In *South Coimbatore* district $23\frac{1}{2}$ miles of Coimbatore-Cochin and Malabar district boundary were cut and burnt in the course of fire protection works.

6. The total length of the boundaries remaining to be permanently demarcated is said to be 285 miles, most of this length being in *Kollegal* and *North Coimbatore* districts, but district forest officers have given no details and the question will be looked into. In the latter district no permanent demarcation was done during the period under report, though there was a length of 101 miles to be done. It is reported by way of explanation that owing to economy the expenditure was restricted to urgent and important works only. It is high time that final demarcation was completed; steps will be taken to get it done as soon as possible. No progress has been made with demarcation of planters' estates in the Anaimalais.

4. FOREST SURVEYS.

(*a*) *By the Survey of India Party.*

7. One party has been at work in *South Coimbatore* district making 1" maps of the hilly tracts of Udamalpet range. In *Madura*, the Ampthill Downs reserve of Kodaikanal range was surveyed and the resurvey of the reserved forests of the Cumbum valley has been commenced.

(*b*) *Local Surveys.*

Fifth Circle.

8. Surveys of coupes, forest enclosures, regeneration area and other minor works of a like nature were as usual done by the local forest officers and draughtsmen in all the districts.

9. *Reference maps.*—These are reported to have been maintained and posted up to date in all the districts.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. Regulation of Management.

(*a*) *Preparation and control of regular working-plans.*

10. In *Kollegal*, the revision of the Araipalayam working-plan has not been completed. The selection of areas to be worked was made during the year and the working was done in the manner outlined for the revision of the plan. The two areas of sandalwood, viz., Bailur and Madeswaranmalai working circles, were not worked under the prescriptions of the sanctioned plan owing to the prevalence of spike disease, and the spiked and dead trees and stumps only were extracted.

11. The revised plan for the Godaipalayam fuel working circle of *North Coimbatore* district prepared by the District Forest Officer and sent up for sanction was not approved, but returned for further revision. The sandalwood working-plans have lapsed, but, in view of the prevalence of 'spike', it is not proposed to introduce new plans at the present time. And the sandalwood area is being worked under temporary working schemes.

The fuel working circles were worked under simple coppice instead of under coppice with standards as prescribed in the working-plan and the clearing of prickly-pear in coupes was stopped. The improvement fellings in two coupes prescribed for the year under the sanctioned working-plan of the Mettupalayam range was not carried out, as the fellings in two other coupes of the previous year left in arrears had to be done. It is reported that the arrear coupes are being worked and the working will shortly be brought up to date.

12. Work continued under the Mount Stuart working-plan in *South Coimbatore*, but the prescriptions in full were not carried out, due to the imperfect methods of extraction, labour difficulties and accumulation of old stock. The latter is being worked off and the labour question is being dealt with and on the way to be solved. When this has been effected, we shall be able to deal with 200 acres of regeneration a year under the Mount Stuart working-plan and also to deal with the 4,500 acres of evergreen forest in Karian shola, which will make a compact block of nearly 17,000 acres in the immediate vicinity of Mount Stuart.

The four coppice with standard series on the Anaimalais outer slopes, Pollachi range, are being embodied in a revised working-plan and two more series are being added. They are to be worked in the future as simple coppice for fuel and special attention will be given to their improvement. The new working-plan for these will be ready in 1921–22.

Felling in coupe XIV of Punachi working circles was worked departmentally instead of being sold standing to contractors and this proved satisfactory. The working-plan stands in need of revision in many particulars, but it will pay better to devote our attention to the more valuable forest near Mount Stuart first, as this is only a low grade timber forest

13. In *Madura*, no new plans were attempted for want of necessary staff. The prescriptions of the plans are being fairly followed, though the working is behindhand in almost every range. The District Forest Officer is devoting his attention to bring up the plans up to date. The shola forests of the High Wavy Mountain were again examined to see if they were worth an effort being made to deal with them, but the result of the inspection only confirmed Mr. P. M. Lushington's opinion that they are of too poor a type, and too far from any market to be dealt with at present.

14. No new plans were made in *Tinnevelly* and the rotation of practically all existing ones expired some time ago and extra coupes have been added to extend the rotations, which in practically all cases were too short. More will be said next

year on this subject as revised plans will be made in as many ranges as possible by then. The Chief Conservator visited the district during the year and made preliminary proposals for making a start with opening up the great shola forests in the Ambasamudram range. Since the close of the year under report action has been taken on these suggestions, and there will be a good deal to be said on this subject in next year's report. *Fifth Circle.*

2. Communications and Buildings.

(a) *Roads and Bridges.*

15. The following are the details for the new works :—

	M.	F.
Construction of roads	9	1
Inspection path	5	5
Alignment of roads	38	5
Total ...	53	3

the total cost being Rs. 11,728.

16. *In Kollegal* Gundal valley road to a distance of two miles and four furlongs was constructed at a cost of Rs. 1,809.

North Coimbatore.—The road from about the 46th mile on the Geddesal-Bailur road to the proposed special camp above Geddesal was extended by two miles during the year, at a cost of Rs. 4,022, which completed it, the total cost being Rs. 6,993. Rupees 318 were spent on metalling the Bargur ghat road.

In South Coimbatore no new important works were carried out, but the existing transport routes were maintained. The plans and estimates for the Mount Stuart ghat road as far as Top Slip prepared by the Forest Engineer Mr. Marshall were sent up for sanction. The bullock tramway continued to work during the year and the quantity of timber transported during the period under report was 11,292 and 7/32 ton miles against 8,080 and 3/16 ton miles in the previous year. The average lead was considerably shorter than in the previous year. No comparison with other methods of transport can however be made as the tramway is the only means of extraction between the coupes worked and the beginning of the carting road to the plains. The bull tracks on each side of the metals were levelled down and all overhanging growth along the line was cleared. The result has been a great improvement in the conditions under which the cattle work. Consequently the cattle finished the year's work in remarkably good condition.

In Tinnevelly the construction of the road to coupe No. 1, Kalakad Working Circle to a length of one mile two-and-a-half furlongs was done. It is reported that this work has more than paid itself by the increase in the amount realized for the coupe.

(b) *Buildings.*

17. The total expenditure on new works during the period under report was Rs. 8,777 and on repairs Rs. 11,328

18. The important works carried out were —

In Kollegal.—The construction of the rest-house and out-houses at Cowdalli (not completed) and subordinates' quarters at Lingamankarai (not completed).

South Coimbatore.—Completion of the construction of subordinates' lines at Dhalli and Muttithorai and of a double kraal in Ayerangal. And in *Madura* completion of the construction of subordinates' lines at Puthur and the rest-house at Rajadani.

The dealing with construction work in districts has frequently been most unsatisfactory with the results that long periods of time are taken over works during which time rates rise and complications ensue and one or even more supplemental estimates are rendered necessary. Instructions have been issued to try and remedy this unsatisfactory state of things.

Fifth Circle.

(*c*) *Miscellaneous works.*

19. Under this head the expenditnre on new works was only Rs. 637, of which Rs. 386 was spent in *Madura* for sinking three wells.

In South Coimbatore the depths prescribed by the water diviner in the wells at Top Slip, Mount Stuart and Anaipadi were reached and apparently no perennial source of water was tapped. Hence the wells were not further deepened but further action has since been taken in this matter and the final results will, it is hoped, prove satisfactory. A scheme for damming the Tunacadavu river and pumping up water for the reservoir so formed, was investigated by the Forest Engineer but this scheme, it is hoped, will not be found to be necessary if the wells prove to be a success.

20. An attempt to diminish the feverishness of Mount Stuart and Attakatti was made by the clearing of a wide belt of land of all growth around both settlements and by filling in stagnant pools and by covering periodically with a film of kerosine oil where found necessary. It cannot however be said that these measures have met with conspicuous success as there has been fever at both settlement this hot weather.

21. *Telephone.*—The line between Anaimalai, Sethumadai and Mount Stuart in *South Coimbatore* is reported to have worked well.

3. Protection of Forests.

(*a*) *General protection.*

22. The total number of new cases during the period under report was 2,685. As the report is for a period of nine months ending 31st March 1921 and as there was interchange of districts owing to the formation of new circles, no useful comparison can be made with the figures of the previous year. Of these 2,685 cases, only 2,473 were detected and these together with the 1,007 cases pending at the close of the previous year made 3,480 cases to be dealt with. (Two thousand three hundred and twenty-seven cases were disposed of, leaving a balance of 1,153 at the close of the year.)

23. The number of cases taken to court was 1,530 out of which conviction was secured in the case of 693 and 22 were acquitted. The percentage of acquittals being 3; 815 cases are pending disposal by the court.

24. The number of cases compounded in the several districts of the circle and the amount of compounding fees collected are shown below :—

District.	Number of cases compounded.	Amount of compounding fees collected.
		Rs.
Kollegal	190	1,650
North Coimbatore	331	3,000
South Coimbatore	169	2,366
Madura	170	3,118
Tinnevelly	641	3,071
Total ...	1,501	13,205

25. The patrol gangs in *Kollegal* is reported to have continued to work and added to the efficiency of protection. In *Madura* a special patrol party of one forester and six forest guards has been organized from 1st February 1921 in Cumbum range as the ordinary protective establishment is not able to put down timber theft in the range.

26. A reward of Rs. 37 was paid for detection of cases in *Kollegal*, *South Coimbatore* and *Madura* districts.

(*b*) *Protection from fire.*

27. *Special protection.*—In the *North Coimbatore* district a trial of early burning was carried out for the first time. Fifteen square miles of forests were burnt in Satyamangalam Range at a cost of Rs 211-9-0 and 20 square miles in Talamalai Range at a cost of Rs. 178-8-0. The work is reported to have been carried out satisfactorily.

In *Kollegal*, early burning of about 3,000 acres of grassy areas was done for the first time for the protection of the neighbouring sholas in the Doddasampagai reserve. It is reported that this was successful so that there was reduction in the number of fires under general protection. *Fifth Circle.*

Apart from these two instances there was no change in the system of fire protection. I hope to have more to say about this system next year.

28. The area shown as attempted to be specially protected was 308,929 acres and the total cost therefor was Rs. 15,026. 14,732 acres under special protection were burnt. So the percentage of successful protection was 95·2. The major portion of the area burnt was in the *Madura* district (10,291 acres). The District Forest officer says that the unsatisfactory result of protection was mainly in the sholas of the Ampthill Downs reserves and this is bound to occur as long as the burning of grass is allowed under G.O. No. 942, dated 28th April 1915; and that a revised scheme for the better fire protection of this reserve is under investigation. The pine plantations at Kodaikanal were successfully fire protected under an improved system of fire protection. The fire protection was fairly successful in *Kollegal*, *North* and *South Coimbatore* districts.

29. *General protection.*—The area under general protection was 1,654,822 acres, the area burnt 30,714 acres and the percentage of successful protection was 98·1. The major portion of the area burnt was in *Kollegal* (12,273). The District Forest Officer, however, says that the protection was more satisfactory than in the previous year during which 18,135 acres were burnt. No useful comparison can however be made with the cost or results of the previous year as the period under report ends in the middle of the fire season.

30. There were on the whole 237 fires both in the areas under special and general fire protection and the total area burnt was 45,446 acres.

(*c*) *Protection against cattle.*

31. Two thousand three hundred and sixty eight square miles (or 74·3 per cent) of the total area was open to grazing of all animals except goats and an additional small area—·5 per cent—was open to all animals except browsers (sheep and goats).

32. *Incidence of grazing.*—In *Kollegal* the incidence is roughly 6·7 acres per cow unit on an average. It is, however, reported that many thousands of acres in the higher and steeper slopes in the Doddasampagai and Madeswaranmalai reserves and a less extent in other reserves are out of reach of cattle and if allowance be made for this fact the incidence is probably double.

In *South Coimbatore* the incidence of grazing is 24·1 acres per cow unit when calculated from the area open but this includes much shola forests and grass hills of the Upper Anamalais where cattle are seldom taken for grazing.

In *Madura* the average grazing incidence was 7·5 acres per cow unit. The other two districts do not report the incidence.

33. The number of cattle impounded during the period under report was 10,822 against 15,912 in the previous year and 14,422 the average for the past three years. The decrease is mainly due to the fact that the present report covers a period of nine months only.

34. *Introduction of the Forest village system.*—*Kollegal.*—The revision of the scheme referred to in the last report is still under preparation. But it is reported by the District Forest Officer that the scheme as it is generally understood would not suit this division.

(*d*) *Protection against injuries due to natural causes.*

35. *Spike disease of sandal.*—In *Kollegal* the spike is reported to have done considerable damage in the sandalwood areas. The spike isolation line around the infected area was given up being ineffective to check the spread of spike. It is however reported that there is no sign of its spread to other areas. The cutting of climbers in all sandal trees in about 900 acres was done. In *North Coimbatore* it is spreading in most of the sandalwood areas. In *Tinnevelly* it is reported that the spike has established itself in Ambasamudram range on "zizyphus oenophia" and "Dodonea viscosa" but has not appeared in the sandalwood area.

Fifth Circle.

36. *Prickly-pear, Lantana and Strobilanthes.*—These are the chief pests in the several districts of this circle.

As regards prickly-pear its eradication in the poor forests in which it occurs is too costly to be profitable. The operation was confined to a small area of 71 acres in *Madura* at a cost of Rs. 91 and of 45 acres in *Tinnevelly* done by the subordinates free of cost.

Lantana has got such a grip in the Mount Stuart forests in *South Coimbatore* district that dealing with it has been restricted to regeneration areas where only it can be effectively dealt with. The same system is being adopted in those localities where it is really harmful. In *Madura* there are large areas covered with this pest but nothing has been done to check its spread. The uprooting of lantana in fuel coupes of Tinnevelly was done by subordinates free of cost.

Strobilanthes in fuel coupes was cut and burnt in *Tinnevelly.*

37. *Weeds and climbers—South Coimbatore.*—Weeding in the 1919 regeneration area and in the rosewood regeneration area of 1920 was carried out. Climber cutting and weeding were also done in the worked coupes to help the coppice shoots. *Tinnevelly.*—Weeding and climber cutting in the fuel working circles were done by subordinates, girdling and cutting of undesirable species such as "Xanthophyllam, Mallotas" etc., trees in the experimental areas at Kannikatti and Kodamady, cutting of overhanging bamboos in the Kariar teak plantation, weeding in Kodamady plantation and pruning of teak seedlings transplanted in coupes I and II of Vadagarai-Melpidagai were also undertaken.

38. *Damage by animals—South Coimbatore.*—Considerable damage was caused in the regeneration plots in Mount Stuart forests by bison, sambur and elephants. The latter damaged also the teak plots in Ayerangal working circle. Rats ate neem seeds sown in the Udamalpet fuel coupes. *Madura.*—Some damage was caused to the pine plantations at Kodaikanal by sambur and deer. *In Tinnevelly* the damage caused to the sandalwood and other saplings in Alagar Koil Valley by elephants continued. Sambur and other deer caused great damages to the saplings and small trees in the felled coupes in Srivilliputtur and Ambasamudram ranges.

39. The severe frost in *Madura* between November 1920 and March 1921 caused considerable damage to the *acacia decurrens* seedlings in the Kodaikanal plantation.

4. Sylviculture.

(*a*) *Natural reproduction.*

40. *South Coimbatore district.*—In the Mount Stuart forests natural reproduction is impeded by the dense growth of weeds so that recourse has been had to secure regeneration by the concentrated method of clear felling and dibbling. In the fuel coupes also as has been mentioned in the next paragraph reproduction can be secured by efficient weeding. *Tinnevelly district.*—Teak reproduction is said to be satisfactory in the felled coupes in several working circles and of other superior species in the Srivilliputtur range. Sandal reproduces freely in the same range but requires tending. In the evergreen forests *Balnocarpus*, *Gluta Travancorica*, *Mesua ferrea* and *Aglaia barberi*, reproduce themselves to some extent but the regeneration of these forests is being taken in hand as mentioned below. Natural regeneration of *Acacia planifrons* is fair in the Kaliavur forest. *Madura district.*—Coppice regeneration is generally satisfactory throughout the district but that from seeds is not so. *North Coimbatore.*—Rosewood reproduces itself well by root suckers in the Minchiguli valley but does not get much forwarder owing to the dense growth of grass. As this locality will grow very fine rosewood further inquiry will be made to see how it can be assisted. Sandal reproduces itself well by root suckers but the country is afflicted with spike. Other species give some regeneration, but it is a poor forest country, the soil being poor and the rainfall insufficient to produce anything but small timber except in the Minchiguli neighbourhood.

Kollegal district.—Sandal regeneration is satisfactory, but here again spike prevails. *Hardwickia binata* regeneration is fair, but the same conditions as regards soil and climate prevail generally as in *North Coimbatore* and there is little demand for timber.

(b) Artificial reproduction.

41. At Mount Stuart in *South Coimbatore* 19 acres were cleared for regeneration by dibbling and were sown with Pillamarudu, *Terminalia paniculata* and rosewood, the greater portion with seeds of the former species. The original working plan only contemplated regeneration of teak, but as it was considered advisable to try other species as well, the two abovementioned species were selected. Now regeneration of teak by this method had been carefully tested and proved to be successful, and when extending the system to untested species the precaution ought to have been taken of either limiting the area sown with pillamarudu to a small trial area, or of sowing teak seeds along with it, so that in the event of there being a failure of the pillamarudu we should at any rate have a crop of teak seedlings to carry on with. As this was not done we got nothing on this plot, as the pillamarudu did not germinate. The seed were either bad, or had been collected when unripe. The rosewood germinated over about 8 acres but have been considerably damaged by bison and sambur. They grow extremely slowly at first and have to be weeded for years. This plot of 8 acres will however be carefully tended until the trees are safe from weeds and animals so that the cost of this operation may be ascertained for future guidance. There is a sprinkling of teak seedlings on the rosewood area which have come from seeds that were in the ground and which have taken advantage of the weeding to make head-way. We shall continue to introduce other species by this method, but until it is proved that they can be successfully sown by themselves, they will be sown along with teak, the seedlings of which will be pulled up when the others are established, or left if the others fail. The pillamarudu plot in question was sown with teak in March 1921. *Fifth Circle.*

A test experiment was made in the Ayerangal working circle—one of the old coppice with standard series of the outer Anaimalais slopes forests—with propagating neem, *Albizzia amara* and *Lebbek* by mound sowings in order to fill up blanks in the coupes. These experiments have proved to be successful. The chief cause of blanks however is due to lack of proper weeding. The old time-expired working plan provided for weeding but it is only during the last few years that this important prescription received attention, and then it had to take the form of dealing with lantana. Teak seeds were successfully dibbled in to increase the number of valuable future standards, but now it has been decided to reserve all these series for fuel and the method of treatment has been changed to simple coppice and only good fuel species will be artificially introduced. Our experiments in weeding show that we can get plenty of seedlings where this operation is properly carried out, while in some of the coupes the coppice growth is so vigorous that no help is required. The mound sowings will be introduced only where they are required, and where it is proved that they will succeed. A revised working plan for these series for the Pollachi range is now being made and two new series added to meet the demand and these new operations will be embodied in it whereby these portions of the forest should be greatly improved. In *Tinnevelly* district experiments have been made for some years past with the regeneration of some of the evergreen species in the Ambāsamudram range, but unfortunately the officers who interested themselves in these useful experiments did not put a definite account of them on record with reference to how we should proceed to deal with the regeneration of shola forests as a whole. It is a pity that this was not done as these experiments have been carried out for a number of years and we have now come to the stage at which shola forests have to be regularly dealt with. A start has since been made and the result of the initial regular operations on an extended scale will be reported on next year. In the year under report seeds of *Gluta Travancorica* were dibbled in an area of 12 acres in Kannikatti and in a similar area at Kodamadi. In the former area 575 measures were sown and in the latter 266, the germination is said to be 50 per cent, the seedlings are doing well and are from 9″ to 12″ in height. About one thousand Hopea seedlings were planted out in suitable localities during the year.

One hundred and ninety measures of teak, 130 of vengai, 46 of tamarind, 62 of *Terminalia paniculata* and 11 measures of sandal were sown in the Kadayanallur and Kuttalam working circles, but the District Forest Officer does not report with what result. Two hundred teak seedling s, 1,000 *Albizzia Lebbk* and 200 *Eugenia Jambolana* seedlings were obtained by sowings in Valiyur reserve. Fifteen acres of Kalakad working circle were sown with teak, *Pterocarpus marsupium* and *Terminalia arjuna*

Fifth Circle.

from which 700 seedlings were secured. *Acacia planifrons* seeds were sown in certain areas of the Kaliavur and Vallanad reserves, 62,000 cashew nuts and 39,000 palmyra nuts were dibbled in the Oneil extension and Lushington series, but the results are not given by the District Forest Officer.

In the *Madura* district 20·25 acres of teak were planted at Vannathiparai at the head of the Cumbum valley. This area will be increased as we can obtain sufficient labour as there is a compact block of 2,000 acres to be planted.

One hundred acres of *Acacia decurrens* were planted alongside the pine plantations on the Kodaikānal plateau but were a failure. This is said to be due to the frost but it is likely as not to have been due to insufficient care being taken with the planting. It will be tried again in order to fill up the gaps amidst the straggling pine plantations so as to make a compact block that can easily be protected from fire.

In *North Coimbatore* district cultural operations were confined to the shola tract at Ainagiri in order to extend the sholas and to dibbling of sandal seeds. Experiments have been made with a number of species at Ainagiri and some success has been obtained and more will be said on the subject next year after the area has been inspected. Sandal dibblings over 202 acres were carried out but for one reason or another put forward the result was such a failure that the resultant seedlings are said to have cost over Rs. 2 each.

In *Kollegal* district sandal and other seeds were dibbled to some extent, but generally speaking nearly all the seedlings died in the hot weather. Such operations except where it is proved by limited experiments to be likely to be successful are a waste of money and will be discontinued.

(*c*) *Operations for the improvement of the growing stock.*

42. *South Coimbatore.*—Improvement fellings were carried out in coupe XIV of Punachi working circle. Little good is said to have resulted from such operations which is doubtless due to the rapid growth of inferior species compared to the ones which it is desired to help. The working plan requires revision and more modern methods prescribed.

In *Madura* thinnings of *Albizzia amara* coppice shoots were carried out in coupe III Sirumalai 'S' series and in coupe 1 of the Pannamalai series. The cutting of creepers on standards and other useful trees was carried out by subordinates.

In *Kollegal* the cutting of climbers on sandal was carried out.

5. Exploitation.

(*a*) *System of management.*

(*i*) Major forest produce.

43. The total area under working plan during the year was 1,087 square miles and the various sylvicultural systems in force were as set forth below.

Sylvicultural system.	Area in square miles.	Percentage of total area under each Sylvicultural system.
Selection method	76	7·00
Simple coppice	395	36·34
Coppice with standards	321	29·53
Unregulated fellings	261	24·01
Forests for which working plans have been prepared but not subjected to any definite system of working ...	34	3·12
Total ...	1,087	100·00

44. Selection fellings were carried out in *Kollegal* and *South Coimbatore*, simple coppice in all the districts and coppice with standards in *Kollegal*, *Madura* and *Tinnevelly*. The unregulated fellings were in *North Coimbatore* and refer to the extent representing the area of lapsed Working Plans.

45. A small area of 19 acres was clear felled in *South Coimbatore* for regeneration works and clearings were also carried out around Mount Stuart and Attakatti settlement for sanitation purposes.

(ii) *Minor Forest Produce.*

46. (i) *Bamboos.*—Twelve bamboo coupes of 25,031 acres in *North Coimbatore*, 3 of 2,279 acres in *South Coimbatore*, and 5 of 19,326 acres in *Madura* were leased out to contractors. In *Kollegal* bamboos continued to be removed under the unregulated permit system as there was no demand for the located coupe fellings. *Fifth Circle.*

47. (ii) *Miscellaneous produce.*—The right to collect all other minor produce was as usual sold to contractors.

Free removal of fodder grass was permitted in *Kollegal* from areas where there was no fire in the previous year. Seven hundred and three tons of fodder grass were removed on permits in *North Coimbatore.*

In *Madura* stones, thorns and earth were removed to a limited extent on permits.

Grazing was as usual controlled by permits. 241,359 animals were permitted to graze in reserved forests on payment and the total revenue realised was Rs. 110,879.

(b) Agency of Exploitation.

(i) Departmental Agency.

48. *Major produce.*—The extraction of timber was as usual mainly by departmental working. Sandalwood extraction also was carried out departmentally. So also the drag poles and agricultural implements in *North Coimbatore* for sale to the public.

49. *Minor produce.*—Collection of honey and wax was undertaken departmentally in *Kollegal* for supply to Medical Stores and so also the seeds required for sowing.

(ii) By purchasers.

50. Major produce.—The fuel coupes in all the districts were sold to contractors. The right to collect spokes and felloes from tops and branches of felled trees in a timber coupe in *South Coimbatore* was also leased out to a contractor.

51. *Minor Produce.*—Twelve bamboo coupes in *North Coimbatore*, 3 in *South Coimbatore* and 5 in *Madura* were leased out to contractors; so also the other minor produce in all the districts. The right to collect dried and seeded bamboos in Udamalpet range of *South Coimbatore* were sold to a contractor.

(iii) By right and privilege holders and free grantees.

52. The following statement shows the quantity and estimated value of produce removed by right and privilege holders and free grantees.

—	Timber in thousands of cubic feet.	Value.	Fuel in thousands of cubic feet.	Value.	Bamoos in value.	Grazing.	Other Minor produce.	Total.
		Rs.		Rs.	Rs.	Rs.	Rs.	Rs.
Right holders	..	..	..	..	31	..	881	912
Free grantees	2	306	3	897	1	894	42	2,140

53. (1) *By right and Privilege holders.*—In *North Coimbatore* 2,480 bamboos were removed by right holders. In *Madura* concession to quarry stones and road materials free of charge from the unreserved lands and reserved forests, granted to departments of Government and local bodies was continued.

Date and palmyra leaves valued at Rs. 881 were removed by right holders in *Tinnevelly.*

54. *Free grantees.*—Four hundred bamboos were granted free of cost in *North Coimbatore* for rebuilding houses burnt by fire. In *Madura* free grazing in the Ampthill Downs reserve was allowed as usual; and for the reconstruction of houses destroyed by fire, palmyra leaves to the value of Rs. 42 and 119 c. ft. of timber valued at Rs. 30 were granted by the Revenue authorities. In *Tinnevelly* free grant of timber and fuel worth Rs. 577 was made from the unreserves. In *South Coimbatore* 44 palmyra trees and 1 cartload of jungle wood posts, 3 cart loads of bamboos and some posts aggregating in value to Rs. 133 were granted for rebuilding houses destroyed by fire.

Fifth Circle.

(c) *Outturn and sources of forest produce.*

55. The total outturn of *Major Produce* and the total value of *minor produce* from all classes of forests by all agencies during the period under report with similar details of the previous year are shown in the subjoined statement.

Agency of exploitation.	Timber and sandalwood in thousands of cubic feet.		Fuel in thousands of cubic feet.		Bamboos in value.		Minor produce including grazing in value.	
	1919-20.	1920-21.	1919-20.	1920-21.	1919-20.	1920-21.	1919-20.	1920-21.
					Rs.	Rs.	Rs.	Rs
By Government agency ..	94 *[71]	51	18 [14]	15	425 [318]	131	670 [502]	933
By purchasers	372 [279]	225	4,505 [3,378]	3,381	22,712 [17,034]	13,810	2,45,615 [1,84,212]	1,95,115
By right and privilege holders.	..	..	..	..	..	31	865 [648]	881
By free grantees	8 [6]	2	..	3	..	1	1,126 [846]	936
Total ..	474	278	4,523	3,399	23,137	13,973	2,48,276	1,97,865

* The figures in brackets denote the proportionate amounts for 9 months in 1919-20 and are given for purposes of comparison with the figures for the period under report.

56. *By Government agency.*—The decrease under *timber* was mainly in *South Coimbatore* due to the fact that there was no felling in coupe II of Mount Stuart Working Circle. The small increase under *fuel* was in *Kollegal* and it represents the quantity confiscated to Government owing to its non-removal by the coupe contractor. The decrease under *bamboos* was due to a less quantity used for departmental works. The increase under other *minor forest produce* was in *Kollegal* owing to the departmental collection of honey and wax and in *South Coimbatore* due to better prices obtained for elephant tusks.

57. *By purchasers.*—The decrease under *timber* was in *South Coimbatore* due to there having been no sale of the right of felling and removal by contractors as was in the previous year. The small decrease under *fuel* also was in *South Coimbatore* due to the non-sale of two fuel coupes during the period under report. The decrease under *bamboos* was in *North Coimbatore* (but the reason for this has not been explained by the District Forest Officer). The increase under minor forest produce and grazing is mainly in South Coimbatore due to the revenue from tanning stuffs having been credited to forest remittances instead of to Military Accounts during the previous year.

58. The figures under *right and privilege* holders and *free grantees* are fluctuating and call for no remarks.

CHAPTER III.—FINANCIAL RESULTS.

59. The subjoined statement compares the revenue and expenditure of the period under report with those of the corresponding period of the previous year. The average of the preceding quinquennium is also shown therein.

	1920-21 (for 9 months ending 31st March 1921).	1919-20 (for 9 months ending 31st March 1920).	Average of preceding 5 years.
	Rs.	Rs.	Rs.
Revenue	10,19,440	9,77,129	7,51,032
Expenditure.			
Refunds	6,178	8,364	3,030
A. Conservancy and Works	2,02,234	2,26,433	2,11,083
B. Establishment	3,17,920	2,46,134	2,81,779
Total expenditure ..	5,26,332	4,80,931	4,95,892
Surplus ..	4,93,108	4,96,198	2,55,140

Note.—For purposes of comparison the actuals for the 9 months of the previous year (1919-20) have been shown in this statement.

60. Of the total receipts of the period, 68 per cent were from major produce. *Fifth Circle*
10 ,, minor produce.
11 ,, grazing.
11 ,, miscellaneous items.
Of the expenditure on A. Conservancy and Works, 23 per cent was spent on exploitation, 28 per cent on upkeep and improvement, and 49 per cent on miscellaneous items.

61. There was an increase in the gross revenue over that of the corresponding period of the previous year and over the average of the preceding five years.

The increase under revenue was mainly under the sub-heads of I (*a*) *Timber*, I (*d*) *Sandalwood* and V(*b*) *Other sources*, due to a larger sale of timber in *South Coimbatore*, to better prices realized for sandalwood in *North Coimbatore*, and to the arrear collection of estate rents and to the sale of five elephants in *South Coimbatore*, respectively. All the districts showed surplus in the year's transactions.

62. The outstandings of revenue at the end of the period was 2,47,051-9-5, of which Rs. 64,369-0-3 fell due in the period under report. The estimated value of timber and other produce at the sale depots at the close of the period under report was Rs. 1,03,740 against Rs. 1,55,566 at its commencement.

63. The expenditure under "A. Conservancy and Works" was less than that of the corresponding period in the previous year, due mainly to a less amount spent in sandalwood operations, road and building works and as compensation for lands and rights. There was increase under "B. Establishments" and this was due to the increased cost of pay and allowances of the establishment.

CHAPTER IV.—EXPERIMENTS AND RESEARCH.

64. *South Coimbatore.*—A small area was sown with *Terminalia tomentosa*, *Lagerstromeia lanceolaia*, *Xylia xylocarpa* and *Pterocarpus marsupium*, the seeds germinated well but the crop was destroyed by the trampling of bison. This experiment would have given us useful information but it will be repeated in the regular regeneration areas in the future.

The first batch of selected 'Terminalia tomentosa' logs will be despatched to Messrs. W. W. Howard Bros. & Co., as a trial in July 1921. We have no seasoning plant at Mount Stuart and although only first class logs are being sent they are not seasoned, so the effort is somewhat of a venture, the result of which will be anxiously looked forward to. If it succeeds we can send regular supplies, but if Messrs. W. W. Howards Bros. & Co., say that it must be seasoned first, then we shall have to consider the question of a local seasoning plant and saw mill. With the increase of labour which we hope to be able to procure when the coolie lines are erected we shall be able to greatly increase our output of timber and also to take up the working of Karian shola-4,500 acres—which will be easily exploitable. This increase of output may then justify the erection of a saw mill, for besides these areas we have others, both deciduous and evergreen, which, although they are more difficult of exploitation, yield fine timber.

In the meantime Messrs. W. W. Howard Bros. & Co. are being asked if they can dispose of *Terminalia paniculata* which is akin to *Terminalia tomentosa*, *Adina cordifolia*, a timber specially mentioned recently in Mr. Troup's lecture before the Society of Arts, *Albizzia lebbek* and its kindred species *Albizzia odoratissima*. The Kolar authorities will be asked whether they will take Anogeissus latifolia and other such species of which we can make a regular supply from these forests.

Tinnevelly district.—Inquiries will be made as to which of the shola species will be useful for railway sleepers so that the information may be available as soon as possible with reference to the schemes for working these forests. We shall, when the working is developed, have large supplies of timber to deal with and it is hoped that, with the help of a saw mill and plant for treating sleepers, we shall be able to do something useful to assist the sleeper problem.

North Coimbatore.—The experiments here took the form of trials with early burning to assist fire protection. The results are said to be satisfactory but more will be said about them next year.

CHAPTER V.—ADMINISTRATION.

Fifth Circle.

65. The four circles of the Presidency were rearranged and formed into six circles with effect from 1st February 1921. A list of officers in charge of the circle and of the several divisions, is appended to this chapter.

1. Health of the Establishment and Sanitation.

66. The health of the establishment in *Tinnevelly* is reported to have been fairly good throughout the year and there were no casualties.

In Kollegal.—The health of establishment was far from satisfactory. Almost every forester and several forest guards and three rangers went on leave through ill-health; so also two range clerks and a District Forest office clerk. There were five deaths among forest guards.

North Coimbatore.—It was not so bad as it was in 1919–20 except for the death of two foresters—one died of heart failure and the other of enlarged spleen. Only two foresters and two peons had to go on sick leave.

South Coimbatore.—Mount Stuart and Attakatti have as usual been very malarial during the hot weather; measures taken to combat this disease have only been fairly successful. One range clerk and two watchers died of malaria. Many subordinates had to be granted leave on account of malarial fever.

Madura.—Health conditions are reported to have not been satisfactory. Plague was severe in two of the ranges and in the town for some time. Most of the subordinates in Cumbum range were laid up with malarial fever and the casualties were two forest guards and two watchers.

2. Tours.

67. His Excellency the Governor visited the forests of *South Coimbatore* Division during the year under report.

The Chief Conservator visited the Kodaikanal range of the *Madura* district during August last and inspected the forest.

The Conservator of forests inspected the Mount Stuart forests of *South Coimbatore* district and also the forests in Cumbum and Kodaikanal ranges of *Madura* district.

The total number of days spent in camp was 214.

District Forest Officers.—All District Forest Officers spent more than the prescribed period on tour except *Tinnevelly* District Forest Officer who spent 132 days during the period under report.

3. Inspections.

68. *Conservator of Forests.*—During the period under report only the *Madura* District Forest office was inspected.

District Forest officers' inspections of range offices.—Two out of the four ranges in *North Coimbatore*; three out of four in *South Coimbatore*, one out of six in *Madura* were inspected by the respective District Forest Officers during the period under report, the results being reported to be fairly satisfactory. None were inspected in *Kollegal* and *Tinnevelly* districts.

4. Audit of District Forest Office Accounts.

69. The accounts of *Madura* and *Tinnevelly* District Forest offices were audited by the Assistant Inspector of Local Fund Accounts and the results are reported to be satisfactory. The accounts of other districts were not audited during the period under report.

5. Vernacular training School.

70. A school conducted in Tamil was opend from 1st February 1921 in *North Coimbatore* Division with 28 students (eight foresters and 20 forest guards) from Kollegal, North Coimbatore, Central and South Coimbatore divisions. M.R.Ry. R. Guruswami Ayyar, ranger, first grade, was appointed as senior instructor and M.R.Ry. K. Kunhiraman Menon as Junior Instructor and the school is in progress.

LIST OF OFFICERS IN CHARGE OF THE CIRCLE OFFICE AND THE DIVISIONAL OFFICERS. *Fifth Circle.*

CIRCLE CHARGE.

Mr. C. E. C. Fischer	From 1st July to 19th December 1920.
Mr. H. F. A. Wood	From 29th December 1920 to 31st March 1921.

DISTRICT CHARGE.

Kollegal	Mr. W. H. Woodhouse Adolphus, Extra Assistant Conservator throughout the period.
North Coimbatore	Mr. C. Due. Pre. Thornton, Deputy Conservator of Forests, throughout the period.
South Coimbatore	Mr. J. S. Scot, Deputy Conservator of Forests, from 1st July to 26th October 1920.
	Captain W. G. Dyson, M.C. Deputy Conservator of Forests, from 27th October to 31st March 1921.
Madura	Mr. S. V. Devadason, Extra Assistant Conservator of Forests, from 1st July up to 22nd October 1920.
	Mr. K. A. Chengappah, Extra Assistant Conservator of Forests, from 23rd October 1920 to 31st March 1921.
Tinnevelly	Mr. W. C. Hart, Extra Assistant Conservator of Forests, from 1st July to 31st October 1920.
	Mr. D. T. Barry, Deputy Conservator of Forests from 1st November 1920 to 31st March 1921.

CHAPTER VI.—GENERAL.

1. FORMATION AND MANAGEMENT OF PANCHAYATS.

71. No new panchayats were formed during the year. In *Kollegal* no area has been handed over for panchayat management and it is reported that the villagers are not at present ready for the formation of the forest village and panchayats.

North Coimbatore.—The management of the Andiyur village panchayat (2,520 acres of unreserved land) is reported to be still unsatisfactory. The Collector has already recommended its dissolution and deferred final orders pending orders on Mr. Bles' report.

South Coimbatore.—The panchayats in Dharapuram taluk were inspected by the District Forest Officer and the result was very satisfactory. And fresh agreements have been executed by the panchayatdars for three years from 1920-21.

Madura.—Of the six reserves in class V, four of 9,635 acres continued to be under panchayat management and the question of handing over the other two reserves is under correspondence with the Revenue authorities. There is also proposal for handing over Kodimangalam block B and a portion of Vikramangalam reserve for panchayat management and this awaits Chief Conservator's sanction.

The panchayat management is reported to have been fairly satisfactory.

In Tinnevelly, the four panchayats continued to work during the period under report.

2. MEASURES FOR IMPROVING LOCAL SUPPLIES AND FACILITIES.

72. *Manure leaf supply.*—The limited demand in *Kollegal* was as usual met from private forests and unreserves. No action to encourage the growth of manure-yielding trees and shrubs was found necessary. In *Madura* steps are taken by the Revenue officials to encourage the growth of leaf manure by the ryots themselves on the patta lands and so nothing was done by the Forest Department. In *Tinnevelly* permits for the removal of manure leaves were continued to be issued from the reserves of Nanguneri range.

Fifth Circle

73. *Supply of fuel and Agricultural Implements, etc.*—In *Kollegal* and *Madura* the supply of fuel was attended to by the coupe contractors in accordance with the terms of their agreements so also the supply of agricultural implements in Kollegal. In *Tinnevelly* the issue of permits for babul trees of agricultural implements was continued as usual. In *South Coimbatore*, spokes and felloes were made out of top ends of trees felled in timber coupes and sold. Drag poles also were collected and sold.

The important question of increasing the fuel supply for *Madura* town is receiving special attention. It is hoped that the question may be solved by inducing private people to undertake the growing of casuarinas but the department may have to undertake small operations to show the way and prove to be a profitable undertaking. It is hoped that a special officer will be appointed shortly to make enquiries as to suitable land available for the purpose in the Ramnad district and that progress will have been made in the matter in time to be reported on next year.

In *Tinnevelly* where the fuel question is at present also difficult private enterprise has resulted in a start being made with casuarina growing and progress in this direction will be watched and helped as far as possible. The scheme for the future working of the shola forests should place a considerable quantity of fuel on the market but a good deal has to be done before it can be made available.

In *South Coimbatore* the increasing demand is being met in Pollachi range a new felling series has been added to the four existing ones and another will be added next year. If more are found then to be required they can be arranged for as there is forest available.

74. *Water-supply in grazing grounds.*—In *Kollegal* there is not much difficulty for water for cattle except in a few reserves where the question of improving the existing wells or tanks is under investigation. Nothing was done in *North* and *South Coimbatore* and *Madura* In *Tinnevelly* no expenditure was incurred on this account as no hardship was felt in the matter.

3. Timber transit rules.

75. There was no change during the period under report. The rules are reported to have worked satisfactorily in all the districts.

Sandalwood transit rules for *Kollegal* and *North Coimbatore* districts are also reported to have worked well.

4. Jungle tribes.

76. *Kollegal.*—The seven sholaga Settlements continued to supply labour for the department. The areas under the occupation of sholagas is reported to be 71·15 acres, but the actual extent under occupation was not determined by a resurvey of these settlements.

North Coimbatore.—The two schools opened for the benefit of the sholagas were continued at a cost of Rs. 980–5–1. Opportunities were taken to employ hillmen in the department, one has been confirmed as a Forester in the last grade. Many are employed as forest guards, beat and bungalow watchers and as fire patrols.

South Coimbatore.—All the mulcers and Kadirs in the Mount Stuart forests are employed on forest works and they are supplied with rice at cheaper rates.

In Madura some Paliyans are being encouraged to settle in the Vannathiparai teak plantation so as to secure more labour, by a free lease of land for cultivation purposes.

5. Mining and quarrying—*Nil.*

6. Live-stock.

77. *Elephants.*—*South Coimbatore* is the only district where there are live stock. The number of elephants at the commencement of the year was 22 twelve were captured during the period and one was born. Out of these 35, five were sold for Rs. 14,875 and eight died, thus leaving a balance of 22 valued at Rs. 75,500, at the close of the period. The cause of death in most cases was general debility resulting from attacks of internal parasites. The elephant camp has been in use for many years and has since been moved to a new healthy site. There are a number of urgent

demands for elephant capturing operations have been put forward such as for Mettupalayam in *North Coimbatore* district, Vannathiparai in *Madura* and at Gundal in *Kollegal*. A considerable number could be caught at these centres but lack of Kumakis has prevented operations being started. *Fifth Circle.*

7. Other animals.

78. There were 67 other animals at the commencement of the period. One she-buffalo was purchased for Rs. 102 to feed a young elephant with milk. This buffalo was subsequently sold for Rs. 105. There were no other purchases. Three died, thus leaving a balance of 64 valued at Rs. 4,440 at the end of the period.

79. *Semi-wild cattle capturing operations* in *Tinnevelly*—An attempt was made to capture the semi-wild cattle in Vallanad reserved forest by driving them into two stockades constructed at a cost of Rs. 503. Thirty-six cattle were captured and sold for Rs. 651. The cost on coolies engaged in driving them was Rs. 258.

8. Veterinary Establishment.

80. The Assistant Veterinary Inspector at Mount Stuart is in charge of the live-stock. One jamadar was entertained under proper sanction during the period under report to assist the Veterinary Assistant as part of the live-stock goes to Punachi range during the hot weather.

The Inspector of Live-stock is reported to have inspected the animals on several occasions.

9. Civil Suits.

81. *North Coimbatore.*—A suit was filed in the Erode District Munsif's Court against Ellappa Chetti of Bhavani for the evacuation of the minor produce godown at Bhavani and decree was obtained in favour of the department.

Madura.—A coupe contractor has filed a suit claiming damages for some discrepancy of the area of the coupe sold to him and delay in marking standards. The suit was allowed and the result awaited.

10. Control of unreserved land by the Forest Department.

82. There was no control over unreserved land. The transfer of working-plan tank beds in Tinnevelly to the Revenue department was completed during the period under report.

H. F. A. WOOD,
Conservator of Forests, Fifth Circle.

30*th July* 1921.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1921.

SIXTH CIRCLE

INTRODUCTION.

1. When, in February 1921, the Presidency was divided into six forest circles; the VI Circle was stated to comprise the two divisions in *South Kanara*, the two in *Malabar* and the *Nilgiri* division. It had, however, been intended that it should also comprise that part of the *Central Coimbatore* division which lay in *Malabar* district, the Sholakarai reserved forest of the Attapadi range, and the whole of the Bolampatti and Erode ranges or the whole of the division with the exception of the Mettupalaiyam range. Proposals were submitted for putting the latter range under the administration of the *North Coimbatore* division, and, pending receipt of sanction to these, it was arranged that the Conservator of the V Circle should administer it, the Conservator of the VI Circle undertaking the administration of the rest of the *Central Coimbatore* division. As, at the end of the year, sanction had not been received, it was decided that, in order to avoid confusion, this report should deal with the whole of the *Central Coimbatore* division and not only with the area under my administration. *Sixth Circle.*

2. Under the proposals referred to, the *Central Coimbatore* and the two *Malabar* divisions are to be called the *Palghat*, *Nilambur*, and *Wynaad* divisions, but as they had not been sanctioned at the end of the year, the old nomenclature has been adopted in this report.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. ALTERATION IN AREA.

3. *Reserved forests.*—A few acres were added during the year. The disforestation of 5,000 acres in the *Nilgiris* and minor area rectifications reduced the total area from 2,034 to 2,029 square miles.

4. *Reserved lands.*—486 acres were notified as reserved lands. The area at the close of the year was 102 square miles.

2. FOREST SETTLEMENT.

5. Small extensions to the existing forests in *North Mangalore*, *The Nilgiris* and *Central Coimbatore* were finally settled, while 76 square miles remained under settlement.

3. DEMARCATION.

6. No new method of demarcation was introduced. Twenty-eight miles were demarcated: of these, thirteen miles in *North Malabar* and 4 in *South Malabar*, which were originally treated as demarcated and the demarcation of which was found defective, were re-cleared and permanently demarcated. Eleven miles of new boundaries were demarcated in *Central Coimbatore*; nineteen miles were specially repaired in *North Mangalore* and *The Nilgiris*. The usual re-clearing of boundaries, free of cost, by subordinates was carried out. The total length of boundaries demarcated at the close of the year was 5,878 miles; 84 miles remain to be demarcated.

4. FOREST SURVEYS.

7. None were made by the Survey of India Department. The departmental surveyors and draftsmen surveyed the year's coupes, areas for reservation in *South Mangalore* and the rights of way and water in Mudumalai forest in *The Nilgiris*. The reference maps were maintained.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. Regulation of management.

Sixth Circle.

8. *Preparation and control of working plans.*—No new working plans were sanctioned during the year, but the new working plan for the Nilambur teak plantations and adjoining forests was almost completed and is now in the press.

The prescriptions of existing working plans were, with small exceptions, worked up to.

Most of the working plans in the Circle are out of date, and there are large areas especially in *South Kanara* for which entirely new plans are required, but, with the present depleted staff, no progress is possible.

2. Communications and buildings.

9. *Roads and bridges.*—Rupees 54,370 were spent on new works and Rs. 14,348 on repairs. The only important new works were those connected with the Chenat Nair forest and comprised the straightening and reconstruction of the road from Olavakode railway station to the Dhoni depot at the edge of the forest (5 miles), and the construction of a road from the Dhoni depot to the forest station on the Sappal ridge. Rupees 36,684 were spent on the former and Rs. 9,803 on the latter; neither was quite completed at the end of the year. A few new cart-tracks were constructed in *North* and *South Mangalore.*

10. *Buildings.*—Rupees 22,510 were spent on new works and Rs. 4,040 on repairs. The most important works were the new circuit house at Nilambur on which Rs. 6,871 were spent during the year and which has now been completed at a cost of Rs. 13,847 and a rest-house and out-houses at Tadagam in *Central Coimbatore* division. Progress was made on the construction of subordinates' lines in *North* and *South Mangalore* and *North Malabar.*

11. *Miscellaneous.*—The only important work was the construction of a pipe line for the supply of water to the forest station at Sappal in the Chenat Nair forest. Rupees 1,602 were spent on this during the period under report and the work has since been completed at a total cost of Rs. 10,010. The water is brought in pipes from a perennial stream about a mile away and it will now be possible to house large numbers of coolies in a healthy situation with water running past their doors.

No progress was made on the project for improving the Nilambur river owing to the objections of the riparian owners. I understand that work on the improvement of the Paishwani river in *South Mangalore* was begun by the Public Work Department, but I have received no report as to what was done.

3. Protection of Forests.

(a) *General protection.*

12. The following statement shows the number and classification of forest offences reported during the period of nine months as compared with three-fourths of those of the previous year and of the average of the three years ending with 1919–20 :—

Cases.	Injury to forests by fire.		Unauthorized felling.		Unauthorized grazing.		Other offences.		Total.		Three-fourths of the average for three years ending with 1919–20.
	1919-20	1920-21.	1919-20.	1920-21.	1919-20.	1920-21.	1919-20.	1920-21.	1919-20.	1920-21	
Cases taken to court.	10	10	211	155	70	91	34	40	325	296	267
Cases compounded.	23	21	758	792	267	325	148	128	1,196	1,266	1,187
Cases undetected.	92	106	2	6	..	..	..	..	94	112	104
Total ..	125	137	971	953	337	416	182	168	1,615	1,674	1,558

Note.—The figures for 1919-20 are three-fourths of the number reported during that year.

The undetected cases were mostly those in which incendiarism is assumed. There was an increase in grazing offences in *South Mangalore* and The *Nilgiris* and in unauthorized fellings in the latter. The increase in *South Mangalore* is attributed to the enhancement of grazing fees as a preliminary to the introduction of the forest village system; the result of the enhancement being that the people refrained from purchasing permits and resorted to illicit grazing. *Sixth Circle.*

13. There were no cases of importance. The percentage of cases prosecuted was 19 and the percentage of convictions in prosecuted cases was 85·5. The amount of compounding fees realized was Rs. 10,509.

14. Rewards aggregating Rs. 50 were granted to informers and subordinates in *South Mangalore* and *Central Coimbatore.*

(*b*) *Protection from fire.*

15. In accordance with recent orders, the period dealt with under this head is the calendar year 1920. No fires occurred from July to December, and those which occurred in the first half of the year were dealt with in the last annual report from which the following information is extracted for easy reference. There was no change in the system of *special protection* except that in *The Nilgiris* the outer fire lines of the Mudumalai working circle were converted from covered to open lines. The area over which protection was attempted was 881·67 square miles, and the area burnt was about 102·55 square miles; the percentage of success was thus 88·37. The area over which *general protection* was attempted was 780·76 square miles, the area actually protected being 775·55 square miles and the percentage of success 99·33.

16. The results of fire protection for the circle as a whole were bad. Sixty-five thousand, nine hundred and forty acres under special protection were burnt over as against 13,412 in the previous year. Nearly the whole of this increase occurred in *North Malabar* (30,050 acres against 974) and *The Nilgiris* (31,543 against 2,503). Disastrous fires occurred in these two districts, most of which are stated to have crossed outer boundaries. In *The Nilgiri district* it is reported that rains up to the end of January and mists to an even later date prevented the thorough fire tracing of the lines in good time. A sudden dry period ensued and caused the grass to dry rapidly. For want of labour, the fire tracing thereafter progressed slowly, and before it could be completed the fires swept in. Presumably similar condition prevailed in the adjacent tracts of *North Malabar.*

17. In Appendix A, and Form No. 72, the figures given in last year's report have been adopted. They are not strictly accurate as they include expenditure incurred in November and December 1919 on clearing fire lines, but calling on the District Forest Officers for the actual figures would delay the submission of this report and the expenditure is small and probably much the same as that incurred last November and December.

(*c*) *Protection against cattle.*

18. There was an increase in the areas closed to grazing from 403 to 414 square miles. The increase was due to the closure of areas under regeneration in *North* and *South Mangalore* and of coupes in *Central Coimbatore.* 34·3 per cent of the total area was open to all animals except goats, and 46·2 per cent was closed to sheep.

The incidence of grazing has not been mentioned by District Forest Officers.

19. The number of cattle impounded during the nine months was 2,721 against 2,769, three-fourths of the figures of 1919–20. Compared with three-fourths of the average for the three years ending 1919–20, the number of cattle impounded increased by 158.

(*d*) *Protection against injuries from natural causes.*

20. There is nothing to report. Such operations as uprootal of *lantana* and removal of *loranthus* previously dealt with here have been reported on under the heading "*operations for the improvement of the growing stock*" as they seem to fall more naturally under that heading.

4. Sylviculture.

(a) *Natural reproduction.*

Sixth Circle.

21. None of the District Forest Officers have reported on the seeding of the various deciduous species. The season was a bad one as regards the seeding of most of the evergreens, though *Artocarpus hirsuta* is reported to have seeded well in *North Mangalore.*

The first systematic fellings to be undertaken in evergreen forests in this part of India were carried out in the Chenat Nair forest. Natural reproduction here is prolific and it is hoped that when the correct method of removing the old crop has been discovered, a new crop produced naturally will take its place. The first fellings were too severe, the trees were felled green and great damage was done to the seedling growth by the fall of the dense crowns; further, the trees were badly felled, in any direction which suited the fellers, with the result that when the logs were dragged more damage was done. It remains to be seen whether the seedlings were destroyed or merely cut back; in the latter case they will shoot up again. The method of felling now tentatively adopted is to girdle everything except the trees which it is desired to retain for the provision of shade to the seedlings in the hot weather; it is hoped that the latter will establish themselves in one or at most two years when the whole crop will be removed. Felling the girdled trees should not do much damage especially if care is taken to fell them all in the same direction in order to minimise damage during dragging. As a result of the girdling, the young seedlings are already putting on good growth.

(b) *Artificial reproduction.*

22. *Regular plantations.*—Two hundred and seventeen acres in *South Malabar* were planted during the year with teak, 10 acres with *Terminalia tomentosa*, *Dalbergia latifolia* and *Lagerstraemia lanceolata* and about 2 acres with *Dalbergia latifolia.* One hundred and sixty-three acres were clear felled and prepared for planting during 1921-22.

23. *Taungyas.*—Fifty-seven acres in Karadka reserved forest in *South Mangalore* were sown at the end of the previous year and at the beginning of the period under report with *Bombax malabaricum*, *Acrocarpus fraxinifolia*, *Hopea* and *Mangifera indica.* *Hopea* and *Acrocarpus* failed but mango was successful to the extent of 60 per cent; the result of the sowing of *Bombax malabaricum* has not been reported. In *The Nilgiris*, seeds of Aini (*Artocarpus hirsuta*) were dibbled over an area of $3\frac{3}{4}$ acres in the old 'tuckle' at Benne.

24. *Cultural operations.*—In *North* and *South Mangalore*, sowings of *Hopea parviflora*, *Mangifera indica*, *Artocarpus hirsuta*, and *Vateria indica* commenced just before the beginning of the year were continued and the following areas had—at the end of the year—been sown in the *South* division. *Hopea* 320 acres, *Mangifera* 197 acres, *Vateria* 246 acres and *Artocarpus* 188 acres. In the *North* division, 348 acres were sown with *Hopea*, *Artocarpus* and *Vateria*, the total area sown in the two divisions thus being 1,299 acres.

Failures of *Hopea* were replaced by transplanting seedlings found in the forest, and as far as this species is concerned, the operations have been very successful, the average percentage of seedlings which have withstood the past hot weather ranging from 60 to 80; some of the seedlings are said to be 9 inches high. The other species were not so successful, porcupines being responsible for a good deal of damage to *Artocarpus* and *Mangifera* seeds, and many of the *Vateria* seedlings having died in the hot weather. The percentages of success are reported to be *Mangifera* from 10 to 48, *Artocarpus* from 30 to 70, and *Vateria* from 25 to 50.

The sowing of *Hopea* and other species in Chenat Nair forest referred to in last year's report was an almost total failure, due chiefly to too much exposure by weeding late in the season, and also to the depredations of rats and porcupines.

(c) *Operations for the improvement of the growing stock.*

25. The chief operations were the usual thinnings in the Nilambur teak plantations, where the work is somewhat in arrears owing to the paucity of officers, thinnings

in a few teak plantations in *North Malabar* where the work is also in arrears, improvement fellings in *North* and *South Mangalore*, clearing *loranthus* off the teak trees in *South Malabar* and eradicating lantana over small areas in *North Malabar*. *Sixth Circle.*

Climbers were cut over an area of 222 acres in *Central Coimbatore.*

5. Exploitation.

(a) *System of Management.*

(i) Major Forest Produce.

26. The chief items of interest were the commencement of the systematic exploitation of evergreen forest in the Chenat Nair reserved forest and the visit to the circle of Mr. C.S. Martin, the Consulting Forest Engineer to the Government of India. The road from Olavakode to Dhoni depot at the foot of the Chenat Nair forest was completed and slides and dragpaths constructed; the expenditure on the two last named during the year was Rs. 7,661. About 900 tons of timber were felled, and about 700 tons extracted to the depot at Olavakode. No machinery has yet been employed, the logs being dragged by manual labour aided by block and tackle from the stump site to the nearest dragpath along which they are dragged by buffaloes to the slides down which they run to the Dhoni depot, and are thence carted to Olavakode. An agreement was entered into in March with Messrs. John Taylor & Sons' Committee, Oorgaum, that the whole outturn of the forest up to the end of September 1921 should be purchased by the Kolar Gold Mines. This was done with a view to getting unknown evergreen species thoroughly tested and obtaining a market for them. Mr. Martin visited Chenat Nair and made a tour through the Attapadi and Silent valleys. He has since submitted a report showing that, with properly organized logging methods and machinery, the working of these forests is likely to prove a very profitable undertaking.

27. The different sylvicultural systems in force were—

Clear fellings.—Eighty-three acres of teak plantation, 72 years of age, and 80 acres of natural forests were clear felled for the formation of teak plantations in *South Malabar*, the former yielding just over 2,000 tons of teak timber and the latter 1,500 tons of timber of various species. In *North Malabar*, 30 acres were clear felled for the formation of a plantation of teak, *Dalbergia* and *Pterocarpus Marsupium.*

Uniform method.—The operations in the Chenat Nair forest referred to above come under this head; preparatory and seeding fellings are unnecessary owing to the fact that the young crop is already on the ground.

Selection method.—Two hundred and sixty seven acres in *North* and *South Mangalore* and certain unspecified areas in *North Malabar* were felled under this method.

Improvement fellings.—Fellings of this nature were made in *North* and *South Mangalore*, *The Nilgiris* and *Central Coimbatore* over an aggregate area of 884 acres. The fellings in the first two divisions were done chiefly in the interests of young *Hopea.*

Simple coppice and coppice with standards.—About 2,382 acres were worked under the former method and about 614 acres under the latter.

Unregulated fellings.—These were confined to unreserved lands. About 415 qrs. of sandalwood were felled from unreserved lands in *South Mangalore* and *The Nilgiris.*

(ii) Minor Forest Produce.

28. *Bamboos and miscellaneous produce.*—The chief method of exploiting these was farming the right of collection. In *South Malabar*, bamboos were extracted for floating timber, and in the Mudumalai range of *The Nilgiris*, miscellaneous produce was collected departmentally. Permits in other localities were issued for the removal of bamboos, grass, reeds and stone for local consumption. The right of collecting the seeds of nux vomica in *South Mangalore* was leased out. In other divisions, this produce has been leased out since the end of the year.

Fodder grass and hay.—Fodder grass in the forests of Bolampatti and Erode ranges in *Central Coimbatore* was leased out. No hay was made.

Grazing.—Was, as usual, regulated by the issue of permits. The revenue realized during the period under review was Rs. 36,211.

(b) Agency of exploitation.

(i) DEPARTMENTAL AGENCY.

Sixth Circle

29. The quantity of *major produce* exploited was 20 per cent of the total outturn, the chief works being the selection fellings in *North* and *South Mangalore*, the fellings in the *Nilambur* teak plantations and natural forests, the improvement fellings in Mudumalai forests and fuel fellings in the exotic plantations in *The Nilgiris*, the extraction of timber from the Chenat Nair forest in *Central Coimbatore* and the extraction of sandalwood in *South Mangalore* and *The Nilgiris*.

The chief item of *minor produce* removed departmentally is elephant tusks.

(ii) BY PURCHASERS.

30. *Major produce.*—The extraction of timber from the Chedleth coupes in *North Malabar* and most of the coppice fellings were carried out by contractors.

(iii) and (iv) *By right holders and under privileges and free grantees.*

31. The quantity and value of forest produce removed under this head are given below :—

—	Timber in thousands of cubic feet.	Value.	Fuel in thousands of cubic feet.	Value.	Bamboos.	Grazing and fodder grass.	Other minor produce.	Total value.
		RS.			RS.	RS.	RS.	RS.
Right holders	16	6,310	..	..	..	..	..	6,310
Free grantees	2	255	..	..	52	740	734	1,781

(c) Outturn and sources of forest produce.

32. The total outturn of *major produce* and the value of *minor produce* extracted from all classes of forests by all agencies during the period under review were as shown below :—

—	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos.	Gross value of minor produce including grass and grazing.
			RS.	RS.
1920-21	1,231	2,828	20,304	75,300

No useful comparison can be made between the outturn of the period under report and that of the previous year as the former is only nine months and the labour entailed in extracting the figures of the corresponding period of 1919–20 would be very great.

The total number of cattle for which grazing was provided in the various classes of forests was 115,229.

CHAPTER III.—FINANCIAL RESULTS.

33. The revenue and expenditure for the nine months from 1st July 1920 are compared below with the figures for the same months of 1919–20.

	1920-21.	1919-20.
	RS.	RS.
Revenue	8,36,671	10,77,956
Expenditure—		
Refunds	1,992	2,273
A. Conservancy and Works	5,28,099	4,19,792
B. Establishments	2,85,869	1,87,074
Total ...	8,15,960	6,09,139
Surplus ...	20,711	4,68,817

Sixth Circle.

Seventy-seven per cent of the revenue was derived from *major produce*, 6 per cent from *minor produce*, 5 per cent from grazing and 12 per cent from miscellaneous sources.

Of the expenditure, 58 per cent was incurred on exploitation, 26 per cent on the upkeep and improvement of the forests, and 16 per cent on miscellaneous items.

The revenue outstanding at the close of the period under report was Rs. 3,72,559.

34. The decrease in revenue is chiefly due to the fall in the price of timber which seriously affected the revenue in *South Malabar*. The rise in expenditure under A is chiefly due to the expenditure on exploiting the Chenat Nair forest in *Central Coimbatore*, while increases in rates of salary account for the rise of expenditure under 'B. Establishments'.

CHAPER IV.—RESEARCH AND EXPERIMENTS.

35. 1920 was a bad year for the seed of most of the evergreen species and in consequence, the Research officer was not able to do much work in connexion with the growth of young evergreen seedlings.

Certain sample plots for the study of increment were taken over from the Dehra Dun office in the divisions of *South Malabar*, *Tinnevelly* and *South Cuddapah*, while one was taken over from the District Forest officer of *South Mangalore*. Other sample plots for the study of the increment of *Hopea parviflora* were opened in the latter division.

Experimental work was conducted at Dhoni, Nilambur, Nedungayam, and various places in the neighbourhood of Parappa in *South Mangalore*. At Dhoni, the work consisted of nursery experiments on the germination of seed and growth of seedlings, and of sowing various species in the forest; this latter work was not carried out on the right lines and for the most part resulted in failure. At Nilambur and Nedungayam, experiments were undertaken to ascertain whether *Hopea parviflora* and *Artocarpus hirsuta* could be raised as an underwood in the teak plantations; chiefly owing to bad seed they were a failure.

The Research Officer's report is silent on the subject of experiments in raising boxmaking species which were to have been conducted in the natural forests near Nedungayam.

In *South Mangalore*, the experiments were on *Hopea parviflora* and consisted of various degrees of removing deciduous cover over young *hopea*, attempts to ascertain the best method of inducing natural reproduction, where this is absent, attempts to ascertain the best method of artificial reproduction, transplanting seedlings of various ages, and experiments on the coppicing power of the species. At this early stage, there are naturally no results to record.

CHAPTER V.—ADMINISTRATION.

36. *Tours.*—The Conservator of the Western Circle visited all the divisions. All District Forest Officers spent more than the prescribed number of days on tour except the District Forest Officer of *South Malabar* who for a considerable period was in additional charge of *The Nilgiris*.

37. *Inspections.*—The District Forest Offices of *South Malabar*, *The Nilgiris* and *Central Coimbatore* were not inspected owing to the change in the "forest" year which was effected too late to allow of arrangements being made for their inspection. The same reason accounts for the failure to inspect eight range offices.

38. *List of offices audited.*—The accounts of the offices of *North Mangalore*, and *North* and *South Malabar* were audited; the results were satisfactory.

39. *Vernacular Training School.*—There was no school in this Circle, the school belonging to the old Western Circle being located in North Coimbatore.

40. *Health of the establishment.*—This was much as usual, two men dying of malaria in the Attapadi range. Towards the end of the year, a sanitary party visited Dhoni in *Central Coimbatore* with a view to improving the sanitation of the locality by conducting anti-malarial measures. This place is notorious for malaria, and in order to safeguard the establishment in future, quarters are in course of construction

South Circle.

on the top of the adjoining Sappal ridge which, it is thought, will be free from *anopheles*. An extensive clearing of undergrowth was made round the range quarters at Kargudi in *The Nilgiris* to improve health conditions. A similar clearing was ordered at Nedungayam in *South Malabar*, but owing to the ranger's stupidity was carried out only on one side of the road, the dense jungle on the other side although only a few yards from his house being allowed to remain.

CHAPTER VI.—GENERAL.

(i) Formation and Management of Panchayats (to include Forest Village System).

41. In *North Mangalore*, a panchayat working a reserved forest of 89 acres was dissolved owing to bad work. Two others working unreserved lands have not been reported on by the Revenue Divisional Officer. Proposals in this division as well as in *South Mangalore* for the formation of further panchayats are pending my local inspection. In *Central Coimbatore*, the areas under panchayat management were the same as in the previous year. In the Erode range, the management except in two cases is reported to have been bad and in the Attapadi and Bolampatti ranges not very satisfactory.

There are no panchayats in the remaining divisions.

42. The Forest Village System was in force only in the Mettupalaiyam range of *Central Coimbatore* where it is reported to have worked fairly satisfactorily.

43. In *North* and *South Mangalore*, notices were published stating that adjoining villagers would be held responsible for protection of the forests, but they do not appear to have had any effect on the fires. No punitive action was taken. In *Central Coimbatore*, similar notices were issued, and there was no need to take punitive action. In *North Malabar*, no notices were necessary while the District Forest Officers of *South Malabar* and *The Nilgiris* have not referred to the subject.

(ii) Measures for improving local supplies and facilities.

44. No such measures appear to be called for in *The Nilgiris* or *North* and *South Malabar*. In *North* and *South Mangalore*, proposals for allotting areas to be managed by panchayats for the supply of leaf manure are under consideration. In the latter division, a contract has been entered into for the purchase of fuel in the forest coupes and its sale at fixed rates at Mangalore in order to reduce the retail price of fuel in that town recently very high. In *Central Coimbatore*, the existence of numerous fuel coupes provides sufficient facilities.

No measures for the improvement of water-supply appear to be called for as the rainfall is copious over practically the whole circle.

(iii) Timber Transit rules.

45. These are reported to have worked satisfactorily.

(iv) Jungle tribes.

46. There is nothing of any importance to report.

(v) Mining and quarrying.

47. Permission was granted to prospect for mica in the Mudumalai forest of *The Nilgiris*. The result has not yet been reported.

(vi) Livestock.

(*a*) *Elephants.*

48. There were 102 elephants in stock at the beginning of the year, eight were captured and one was born in captivity. Two died and ten were sold, the number in stock at the end of the year being 99. The elephants were on the whole kept in good condition. I took some to the Silent Valley in March for the carriage of kit and found that they improved very much in condition from the change and excellent feeding there available; as many as possible therefore will be sent to the locality next hot weather.

(*b*) *Other animals.*

49. There were 139 buffaloes and 10 bullocks on hand at the beginning of the year ; two buffaloes and three bullocks died or were otherwise disposed of and four bullocks were purchased, leaving 137 buffaloes and 11 bullocks on hand at the end of the year. The buffaloes were chiefly employed in the Chenat Nair forest for dragging timber, and at Nilambur for carting bamboos and dragging saplings. *Sixth Circle.*

(vii) VETERINARY ESTABLISHMENT.

50. A Veterinary Assistant was appointed for charge of the live stock in *South Malabar*, the establishment now consisting of the Inspector of Live Stock at Calicut, with an Assistant at Gudalur for charge of *The Nilgiris* and *North Malabar* stud, and another at Nilambur.

(viii) CIVIL SUITS.

51. There were no suits of importance. The two referred to in last year's report in *North* and *South Malabar* are still pending.

(ix) CONTROL OF UNRESERVED LANDS BY THE FOREST DEPARTMENT.

52. There is nothing to report.

H. TIREMAN,
Conservator of Forests, Sixth Circle.

ADMINISTRATION REPORT OF THE MADRAS FOREST COLLEGE, COIMBATORE, FOR THE PERIOD FROM 1ST JULY 1920 TO 31ST MARCH 1921.

CHAPTER I.

CONSTITUTION.

Mr. Cowley-Brown, the permanent Principal of the College, proceeded on leave on 12th July 1920, and his place was taken by the writer of this report. His leave has recently been extended on medical certificate.

Senior Instructors.—Mr. C. C. Wilson (the writer of this report) was the First Senior Instructor from 1st to 11th July 1920. Mr. J. H. Longrigg remained as Senior Instructor throughout the year.

Junior Instructors.—Messrs R. B. Cornwell and Abdul Karim, Extra Assistant Conservators, were on the College staff throughout the year. Mr. M. R. Sundaram Ayyar, Extra Assistant Conservator, joined the College on 7th July 1920 and remained as Junior Instructor throughout the balance of the year.

The two posts of Sub-Assistant Surgeon were held by Messrs J. E. D'Cruz and V. Ramakrishna Ayyar. They joined duty at the College on 20th October 1920 just before the beginning of the touring season, and were relieved of their duties on 28th February 1921 when the students returned to headquarters.

These two officers delivered lectures in First Aid and Camp Hygiene in camp. First Aid lectures were delivered in headquarters to the students of the Senior division by the Medical Officer in charge of the Lawley Road Dispensary.

Instructions in Physical training, Gymnastics and Drill were as usual given to the students of both the divisions by the College Havildars. In addition to the ordinary bi-weekly drills during the year under review the students did Physical training every day for 15 minutes before lectures started, with beneficial results.

Board of Visitors.—Mr. S. Cox, C.I.E., I.F.S, the Chief Conservator of Forests, Madras, was exofficio President of the Board of Visitors throughout the year.

The following officers were on the Board :—

Mr. H. A. Latham	From 5th November 1920 to 31st March 1921.
Mr. H. F. A. Wood	From 20th December 1920 to 31st March 1921.
Mr. A. B. Jackson	From 3rd January 1921 to 31st March 1921.
Mr. C. M. Hodgson	From 1st July 1920 to 10th October 1920.
Mr. H. Tireman	From 9th January 1921 to 31st March 1921.
Mr. C. E. C. Fischer	From 1st July 1920 to 19th December 1920 and from 4th February 1921 to 31st March 1921.
Mr. B. F. Rigold	From 1st July 1920 to 18th October 1920.
Mr. A. A. F. Minchin	From 11th October 1920 to 8th January 1921.
Mr. J. S. Scott	From 19th October 1920 to 3rd January 1921 and from 29th January 1921 to 31st March 1921.
Mr. H. C. Bennet	From 1st July 1920 to 7th November 1920.

It is hardly necessary to point out that quite half of these officers had nothing to do with the College during the short periods of their acting appointments

CHAPTER II.

Examinations.

The students of the 1919–21 division were examined in First Aid at the end of March 1921. Major Forrest and his Assistant Dr. Peters conducted the examination. Out of the 28 students who sat for the examination 17 earned the St. John's Ambulance Certificate for proficiency in First Aid.

The 1920-22 division began with 37 students on the rolls as per list attached. This number was reduced to 34 before the close of the year, two having been sent down for incapacity and one having died in the Coimbatore General Hospital of long standing malaria.

The periodical and half-yearly examinations held at intervals during the year showed, on the whole, that both this Junior division and the Senior division were making satisfactory progress.

The final examinations were not held during the portion of the year that is included in this Administration Report; those held in June 1920 have already been reviewed in last year's Administration Report, and those held in June 1921 will be reviewed in the 1921–22 report.

CHAPTER III.

Administration.

Board of Visitors.—During the year under review the Board of Visitors did not meet, as this report covers only the period from 1st July 1920 to 31st March 1921.

Of the many subjects discussed at the last Board of Visitors, meeting held in June 1920, the most important,—and one which has been pending for years,—was that relating to the shortage of water. It is much to be regretted that in spite of the fact that this subject has been in the Agenda papers of the past seven years consecutively, and that the importance, and the necessity for a speedy settlement, of this matter has been emphasised year after year, the College is still without an adequate water-supply.

Cost of education.—The cost of education to the Madras Government has been rising steadily since the opening of the College. At present each student costs Rs. 7,213 for his two years' course. This includes interest on capital cost of the buildings and estate, as well as all annual charges incurred including stipends and travelling allowance paid by the Madras Government to the Probationary Rangers; it does not include stipends paid by Native States and other Provinces as these are not a charge against the Madras Government. In cases in which students from Native States and other Provinces pay tuition fees, these have been deducted from the general expenditure. A graph showing the variation in cost per student since the opening of the College is appended (vide Appendix IV). The black line shows the cost as above; the dotted line shows the cost *excluding* all stipends and all tuition fees; it was prepared in this form at the request of the Inspector-General of Forests, for facility of comparison with other similar figures.

The cost is considerable and every effort is being made to reduce expenditure to the minimum consonant with efficiency. Apart from any such possible reduction it may be pointed out that the tuition fees paid by Native States and other Provinces are very inadequate. They pay Rs. 1,800 for the two years' course and in addition to this pay on an average some Rs. 1,500 in stipends and travelling allowance to each Probationary Ranger, making a total cost to them including the tuition fees of Rs. 3,300 per student; whereas the cost per student to the Madras Government is, as shown above, Rs. 7,213.

Touring.—The camping during the year under review has been in accordance with the sanctioned programme. Apart from this there have been several one day excursions. These were to the fuel forests at Mettupalaiyam, the coppice with standard working circle at Walayar, the timber sales at Pollachi, and the Magistrate's Court in Coimbatore, the object being to give the junior students some idea of the practical working of the sylviculture and range administration which they were being taught in the lecture room during their first long headquarter term.

In November the seniors camped at Komuttiyeri and studied sandalwood and in December at Nilambur where they studied the sylviculture of teak. The juniors spent those months in Nilambur and Nedungayam studying the teak plantations and timber depots, and the fine natural forests.

In January and February the seniors camped at Dhoni where they studied the evergreen forests and the modern methods of extraction which are now being introduced there, the juniors in the meantime returned to their old camp at Kargudi in the Nilgiri Wynad where they spent a very profitable six weeks learning fire-protection, scientific improvement fellings, assisting in the capture of elephants, bridging streams, etc.

As usual all operations on tour have been recorded in the College journals extracts or special notes relating to works of direct value to the district being communicated to the District Forest officers concerned through the Conservators.

The thanks of the College are due to the District Forest officers of the districts visited and to their subordinates for the trouble taken to render the touring comfortable and instructive, and for their co-operation and assistance.

While at Nilambur and Nedungayam the students were examined in swimming. Out of 62 students 48 passed the test.

The Senior Provincial Service class from Dehra Dun under Mr. Bourne visited the College in February and were as usual accommodated in the hostels.

Health.—The College camping is of necessity in feverish places but on the whole the health of the College has been very satisfactory. It is with deep regret that I have to record the death at the Government Hospital, Coimbatore, of one junior division student, by name Venkataramanan, one of the most promising of the junior division students. He died in the middle of March of acute and long-standing malaria. He had not had much fever while at the College, but he had suffered from it severely previously and had been greatly weakened and pulled down by it. He was a very promising young ranger and his death is a loss to the department.

This sad event serves to point a useful lesson by emphasizing the great importance of the medical examination which is insisted upon before accepting students at the College. The life is a hard one and the forests are unhealthy; only a man of sound constitution can expect to make good as a Range officer.

With the exception of the most serious cases all were treated by the College sub-assistant surgeons in camp and by the Medical officer in charge of the Common dispensary in headquarters.

One of the College havildars by name Govindaswami died of paralysis at the Coimbatore Government Hospital in March.

Conduct and discipline.—The discipline at the College has during the past year been satisfactory and the general tone has been good. Two students of the senior division had to be dismissed for grave misdemeanour. They have, however, owing to the clemency of the Chief Conservator been permitted to return at the beginning of next year.

Apart from this the conduct of both years has been good. On the whole the students have shown themselves to be self-respecting, courteous and manly young men.

CHAPTER IV.

The Gass Forest Museum, College and Students' Libraries.

The Gass Forest Museum.—Mr. G. Viswanatha Ayyar, the Curator, was in charge of the Museum throughout the year.

The Herbarium catalogue was brought up to date and has now been printed and copies supplied to all Forest officers in the Presidency.

The question of the extension of the Museum which has been considerably discussed of recent years has to be dropped for the present owing to the prevailing financial stringency.

Many contributions were made during the year which included timber, bark, and botanical specimens; an exhibit of rubber; the skin of a hamadryad; etc., etc., and the College is indebted to the donors.

The number of visitors to the Museum during the nine months of the year (1st July 1920 to 31st March 1921) was 15,395 as compared with 14,589 for the corresponding period of last year, and 14,046 for a similar period in the previous year.

The Museum is therefore obviously becoming more popular as it becomes more widely known.

We are endeavouring moreover to make it instructive and to supply useful information to all inquirers.

We are continually receiving timber and botanical specimens for identification, and inquiries are frequently made on a variety of different subjects, and we do our best to satisfy all those who apply to us.

General library.—One hundred and eighty-eight books were added to the General Library, of which 84 were presented by the following:—

Mrs. A. W. Lushington.
H. C. Bennett, Esq.

Students' library.—Forty-three books were added to the Students' library, of which 28 were presented by the following:—

Mr. and Mrs. Cowley-Brown.
H. C. Bennett, Esq.

The thanks of the College are due to the above ladies and gentlemen.

CHAPTER V.

SUPERVISION, WATER-SUPPLY, PLANTING, ROADS, BUILDINGS, ETC.

Supervision.—Mr. Saiyid Fakr-ud-din Sahib, a retired Subadar of the 77th Mappilla Infantry, who was Estate Overseer, resigned the post at the end of October and his place has been filled by the appointment of Mr. A. Marudhachallam Pillai, the College Storekeeper.

Water-supply.—Of the three projects sanctioned for increasing the College water-supply:—

(1) construction of rain-water tanks,
(2) erection of a windmill and pump over the nursery well, and
(3) connecting the municipal well with the College well.

the first has been completed; but it has so far benefited us little.

Item (2) has been kept in abeyance pending the result of connecting up the College and municipal wells.

This, the third item above, is in process of completion. There seems little doubt that after the work of connecting the municipal well with the College well has been completed, the College will have a very fair supply of water, except for drinking purposes as the water of the municipal well has been condemned as unfit for human consumption. The execution of this most important work has been long delayed by the Public Works department and even now it is very uncertain when it will be completed. It was put in hand in November last and rapid completion was promised. However progress during the past month or six weeks appears to be nil. And this is in spite of the resolution of the Board of Visitors in June 1920 to the effect that the work was of great urgency!

Roads.—No new roads were constructed during the year. All the existing roads were kept in repair.

Buildings.—Improvements to the Provincial officers' quarters were completed by the Public Works Department.

Necessary repairs to buildings under the control of the Principal were executed.

Students' Club.—The Students' Club which was opened last year by His Excellency Lord Willingdon has become a centre of social life, and now that it has been furnished, attracts the students in increasing numbers.

We are endeavouring to make them manage the club themselves, with varying success.

CHAPTER VI.

General.

Stock-taking.—The stock of the College was checked in detail in July 1920 by the staff of the College and the irregularities brought to notice were set right.

Establishment.—The work of the office establishment was on the whole bad. A recent inspection of the office has brought to light many grave irregularities, and steps are being taken to correct and prevent these in future, and to punish those who are to blame.

This state of things is largely due to the fact that there is only one highly paid clerk on the establishment, namely the Manager. He is, of course, unable to cope with all the work himself, and does not seem to have been able to get the required results from the low-paid assistants he has had. Now that their pay has been slightly raised it is hoped that a better class of man will be attracted with beneficial results. The conduct of the subordinate establishment has been satisfactory.

The work done by Havildars Kadir Batcha and the late Havildar Govindaswami Pillai in camp is worthy of all praise.

Both the Engineering Instructors Messrs. R. B. Cornwell and Abdul Karim and one Havildar were deputed in July to the Sappers and Miners School of Field Engineering in Bangalore to undergo a short refresher course, with good results.

Athletics.—In Athletics the past year has on the whole been a successful one. The Marathon race was won by N. S. Poonacha, a junior student in the very good time of 45 minutes for 7½ miles; the cup for this race presented by the late Risaldar Major Amir Mahomed Khan was won by the junior division.

The College was unfortunate in the annual sports in not improving on any of the College records. One man sprained his knee, another had no one to push him and get the best out of him. The times were however on the whole good and the competition keen.

The Victor Ludorum Challenge Cup presented by Mr. Richmond was won by senior student S. Ramalingam.

The College Hockey team got well together early in the season and succeeded in winning three out of their six matches. We were however unfortunate in loosing one of the best of the team before the tournament; he had his leg broken in a Hockey Match in which the play had become most lamentably rough, and the result was that he could not play in the tournament. However the College had a great fight with the winners early on in the tournament and thoroughly enjoyed the game.

In the inter-divisional Hockey match the juniors won the Challenge Cup presented by Mr. Cowley Brown after a good game by five goals to nil.

All the staff have taken part, to the best of their ability, in the College Athletics, regularly throughout the year, and this has no doubt done a lot to encourage the students to make themselves proficient, and to stimulate their keenness.

Mr. Cornwell was the Vice-President of the Athletic Club and under his supervision the Athletics were managed with efficiency.

Madras Forest College, Coimbatore,
30*th July* 1921.

C. C. Wilson,
Principal.

APPENDIX I.

List of students admitted for 1920-22 course at the Madras Forest College, Coimbatore.

Name of student.	Circle or State to which attached.
1. P. Gopalan	Northern Circle.
2. B. Kotilingam	Do.
3. A. Tirupathi Rayadu	Do.
4. N. Rajagopala Chetti	Central Circle.
5. J. B. Rodrigues	Do.
6. A. R. Venkataramanan	Southern Circle.
7. M. S. Krishnaswami	Do.
8. V. Chokkayya Pillai (since sent down)	Do.
9. P. Sithapathy Ayyar	Western Circle.
10. M. M. Mandanna	Do.
11. A. K. Kunhunni Nayar	Do.
12. M. V. Ganesan	Do.
13. N. S. Poonacha	Coorg.
14. M. B. Ayyanna	Do.
15. H. Wijesinghe	Ceylon.
16. V. Ramalingam	Do.
17. M. B. K. Molagoda	Do.
18. D. A. Abeyaratne	Do.
19. S. C. Ramalingam	Do.
20. M. G. Joshi (since sent down)	Bombay.
21. G. V. Moghe	Do.
22. G. R. Kelkar	Do.
23. S. R. Punde	Do.
24. J. K. Bodas	Do.
25. K. Gopalakrishna Rao	Do.
26. G. A. Wagle	Do.
27. B. R. Ananda	Central Provinces.
28. L. S. Chati	Do.
29. A. Narayana Rao	Do.
30. Zahurul Haq (since sent down)	Do.
31. Hans Raj Dutt	Do.
32. M. Hans-ud-din Khan	Hyderabad.
33. M. Abdul Hamid	Do.
34. Balakrishna Das	Keonjhar, Orissa.
35. M. Waris Hussain	Rewa, Central India.
36. S. Hebbar Koni	Private student.
37. K. A. Bandari	Do.

APPENDIX II.

Summary of revenue and expenditure for the year 1920–21.

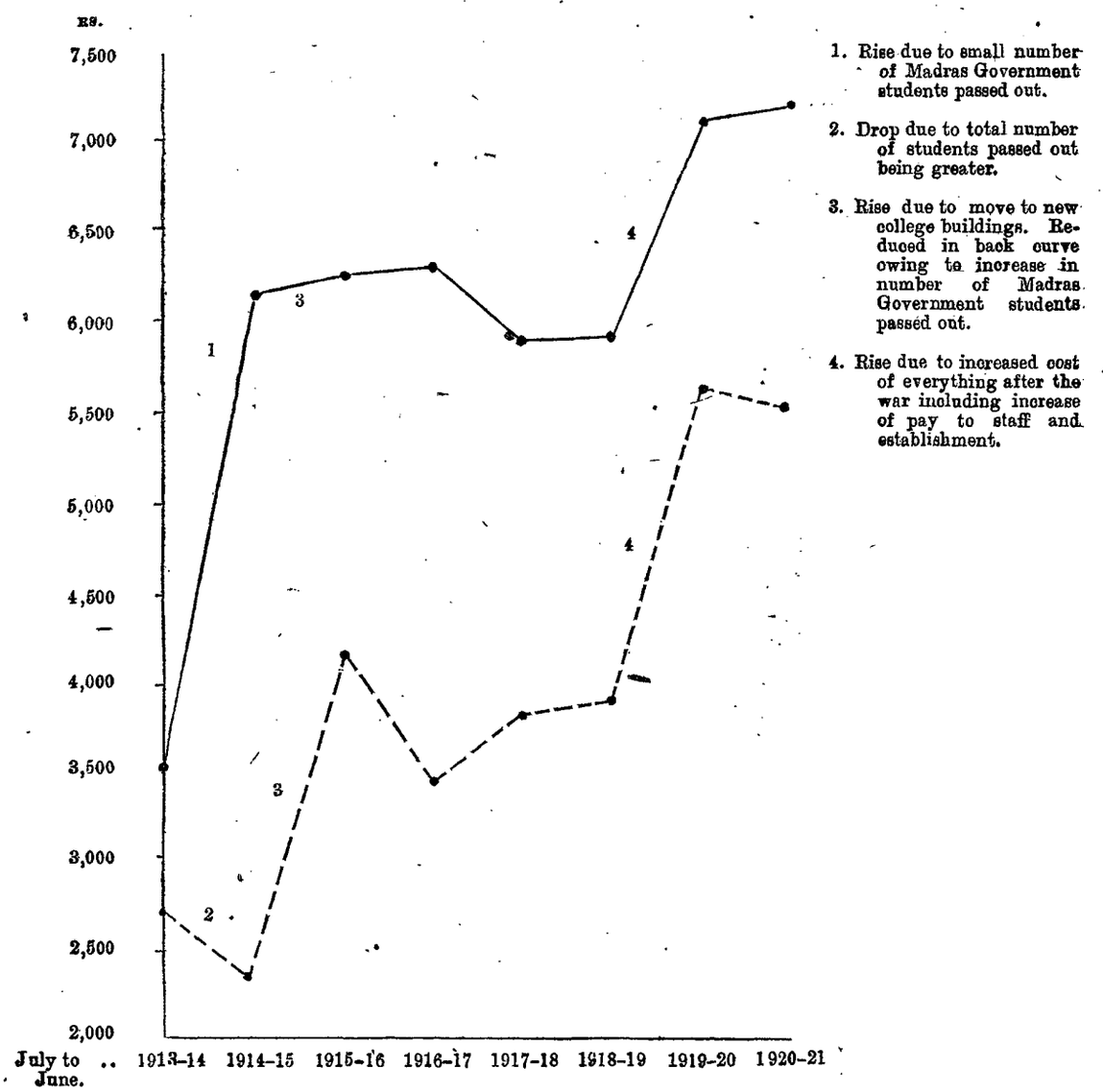
(July 1920 to March 1921).

Heads of service.		Amount.		
Receipts—		Rs.	A.	P.
I (*b*)		133	8	0
II (*d*)		157	6	3
V (*b*)		26,406	0	4
	Receipts total ...	26,696	14	7
Expenditure—				
	A. Conservancy and Works.			
A. VI. C.		20,271	14	4
A. VII. A.		2,913	8	4
A. VII. b.		989	12	3
A. VII. c.		1,598	6	0
A. VIII. e.		3,450	9	4
A. VIII. g.		1,565	10	0
A. IX. d.		1,400	8	10
	Total A ...	32,190	5	1
	B. Establishment.			
B. i. b.		38,214	10	8
B. i. c.		21,707	13	9
B. i. d.		4,979	0	1
B. i. e.		4,644	5	9
B. ii. b.		5,333	4	9
B. ii. c.		5,760	5	1
B. ii. d.		1,105	4	10
B. iii. b. 2.		12,990	10	10
	Total B ...	94,735	7	9
	Total A and B ...	1,26,925	12	10

APPENDIX IV.

Administration Report.

Cost per student for the two years' course at the Madras Forest College.



——— represents the actual cost of education of each ranger to the *Madras Government*. The cost of maintaining the estate and of the working of the college, and interest at 6 per cent on the capital costs of the college have been included; any receipts such as tuition fees, received from outside provinces, Native States, etc., have been deducted.

— — represents the actual cost of education of each ranger excluding his stipend, travelling allowances, etc; and receipts from outside provinces have not been deducted. This graph is for ease of comparison with other colleges where conditions of stipend, etc., may be different.

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APPENDICES.

Appendix A.—Comparative statement of number and origin of fires that occurred during 1920-21.

District.	A. Fires caused by accident or through carelessness in burning fire lines.		B. Fires entering the forests by crossing exterior fire lines.		C. Fires beginning inside the reserves or fire-traced areas.														Causes unknown.		Total of A, B and C and causes unknown.	
					Owing to carelessness or accident.								By intentional firing									
					By workmen engaged in the forests or by purchasers of forest produce and by hay cutters.		By villagers, travellers, etc., passing through the forests.		By railway engines.		By lightning or by fire balloons.		In order to obtain new grass.		In order to turn out game or to reduce cover.		Maliciously fired.		Total.					
	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
First Circle.																						
Ganjām	1	25	13	12,868	1	1,200	9	1,453	..	..	..	..	4	2,080	29	58,580	4	700	47	64,013	15	4,559	76	(a) 81,465
Vizagapatam ..	1	3	4	11	6	48	7	644	..	..	..	..	10	447	1	30	..	..	24	1,169	..	..	29	1,183
Godavari, Upper..	1	300	23	32,868	1	450	4	2,221	..	..	..	..	..	..	10	23,068	1	150	16	25,889	12	22,119	52	81,176
Do. Lower..	..	..	1	150	1	40	12	2,270	..	..	..	..	..	..	..	..	..	..	13	2,310	24	996	38	3,456
Kistna	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	41	3	41
Total ..	3	328	41	45,897	9	1,738	32	6,588	..	..	..	..	14	2,527	40	81,678	5	850	100	93,381	54	27,715	198	167,321
Second Circle.																							(b)	
Bellary	..	..	..	..	..	..	..	..	11	1,901	..	..	..	..	..	..	..	..	(b)11	(b) 1,901	96	50,184	107	52,085
Anantapur ..	..	..	10	3,187	8	649	3	580	1	1,200	..	..	25	12,666	1	17	2	63	40	15,175	5	721	55	19,083
Guntur	..	..	..	..	..	..	5	142	..	..	..	..	..	..	..	..	..	..	5	142	..	..	5	142
Kurnool, East ..	..	..	..	..	..	..	..	..	..	..	..	..	5	1,020	4	1,600	..	..	9	2,620	..	..	9	2,620
Do. South ..	..	..	7	20,970	3	2,780	1	450	6	325	..	..	2	120	..	..	5	584	17	4,259	20	14,915	44	40,144
Do. West ..	..	..	1	20	..	..	5	605	..	..	..	..	..	..	7	9,710	..	..	12	10,315	1	15	14	10,350
Total ..	..	..	18	24,177	11	3,429	14	1,777	18	3,426	..	..	32	13,806	12	11,327	7	647	44	34,412	122	65,835	234	124,424
Third Circle.																								
Cuddapah, North.	..	..	2	515	1	8	4	152	..	..	..	..	6	3,320	..	..	1	2	12	3,482	9	6,976	23	(a) 10,973
Do. South.	1	4,000	1	3,000	..	..	3	1,340	..	..	..	..	5	146	..	..	2	7,600	10	9,086	5	1,243	17	(a) 17,329
Do. West.	1	20	3	1,040	2	40	2	75	..	..	..	..	37	10,650	..	..	4	1,405	45	12,170	5	2,625	54	15,855
Nellore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chingleput ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chittoor	1	15	3	200	4	240	6	74	..	..	..	..	25	9,367	1	20	..	..	36	9,701	..	..	40	9,916
Vellore, North ..	2	15	1	375	..	..	1	2	1	1	..	..	..	..	..	..	10	275	12	278	9	1,066	24	1,734
Total ..	5	4,050	10	5,130	7	288	16	1,643	1	1	..	..	73	23,483	1	20	17	9,282	115	34,717	28	11,910	158	55,807

(a) Includes areas burnt in unprotected forest tracts.

(b) Inserted in the Chief Conservator's office.

Appendix A.—Comparative statement of number and origin of fires that occurred during the calendar year 1920—*cont.*

District.	A. Fires caused by accident or through carelessness in burning fire lines.		B. Fires entering the forests by crossing exterior fire lines.		C. Fires beginning inside the reserves or fire-traced areas.														Causes unknown.		Total of A, B and C and causes unknown.	
					Owing to carelessness or accident.								By intentional firing.									
					By workmen engaged in the forests or by purchasers of forest produce and by hay cutters.		By villagers, travellers, etc., passing through the forests.		By railway engines.		By lightning or by fire balloons.		In order to obtain new grass.		In order to turn out game or to reduce cover.		Maliciously fired.		Total.					
	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Fourth Circle.																						
Vellore, South ..	..	..	..	..	..	..	1	1	..	..	..	..	39	2,083	..	..	1	8	41	2,092	21	1,281	62	3,373
Do. West ..	..	..	1	80	1	22	7	467	..	..	..	..	1	210	9	323	11	315	29	1,387	26	2,193	56	3,610
Salem, East ..	2	6	3	57	..	..	1	*	..	..	1	*	2	39	..	..	2	281	6	320	27	972	38	1,355
Do. North ..	2	8	..	..	..	..	4	173	..	..	..	..	..	..	1	9	..	..	5	182	18	1,518	25	1,708
Do. Central ..	1	3	..	..	..	..	16	125	..	..	..	..	..	..	..	..	3	171	19	296	37	2,431	57	2,730
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13	784	13	784
Total ..	5	17	4	137	1	22	29	766	..	..	1	*	42	2,332	10	332	17	775	100	4,227	142	9,179	251	13,560
Fifth Circle.																						
Kollegal ..	..	..	..	..	3	295	6	687	..	..	..	..	12	11,408	..	..	2	98	23	12,488	33	90	26	12,578
Coimbatore, North.	..	..	3	1,080	..	..	7	4,464	..	..	1	42	..	..	..	..	5	684	13	5,190	19	3,811	35	10,081
Do. South.	..	..	3	600	1	1	2	435	..	..	..	..	2	6	..	..	..	..	5	442	2	1,300	10	2,342
Madura	4	1,536	28	3,607	..	..	6	257	..	..	..	..	301	5,990	..	..	37	1,289	73	7,536	27	1,935	132	14,614
Tinnevelly ..	2	555	8	634	4	1,814	4	61	..	..	..	..	..	..	16	2,767	..	..	24	4,642	..	..	34	5,831
Total ..	6	2,091	42	5,921	8	2,110	25	5,904	..	..	1	42	44	17,404	16	2,767	44	2,071	138	30,298	51	7,136	237	45,446
Sixth Circle.																						
Mangalore, North.	5	142	12	57	..	..	26	406	..	..	2	10	5	32	..	..	3	18	36	466	19	575	72	1,240
Do. South.	7	79	38	1,147	..	..	21	944	..	..	..	..	15	10	9	486	7	463	55	1,903	25	1,619	125	4,748
Malabar, North ..	2	5	6	30,045	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	30,050
Do. South ..	1	20	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	1	1	..	..	2	21
The Nilgiris ..	1	235	5	30,053	2	1,346	12	431	1	1	..	..	..	..	..	..	..	..	15	1,778	10	1,915	* 32	33,981
Central Coimbatore.	6	243	6	548	..	..	..	..	2	15	..	..	..	..	1	142	..	..	3	157	19	420	34	1,368
Total ..	22	724	68	61,850	2	1,346	62	1,781	3	16	2	10	21	43	10	628	10	481	110	4,305	73	4,529	273	71,408
Grand total for 1920-21.	51	7,210	183	143,112	38	8,933	178	18,459	22	3,443	4	52	226	59,595	89	96,752	100	14,106	657	201,340	470	126,304	1,351	477,966
Grand total for 1919-20.	49	10,312	231	224,749	23	5,396	320	68,382	18	3,401	13	546	445	198,447	108	51,452	153	122,849	1,078	450,473	831	201,082	1,989	886,619

* Includes the number of fires not under special protection.

APPENDIX B.—Comparative statement of impounded cattle during 1920–21.

District.	Number of cattle impounded.		Average for three years ending 1919–20.
	1919–20.	1920–21.	
First Circle.			
Ganjām	1,780	890	1,804
Vizagapatam	564	1,037	765
Gōdāvari, Upper	936	..	614
Do. Lower	288	284	577
Kistna	3,235	3,676	3,732
Total	6,803	5,887	7,492
Second Circle.			
Bellary	6,431	5,498	6,632
Anantapur	8,441	5,954	10,898
Guntūr	19,931	17,788	21,771
Kurnool, East	6,200	5,415	5,196
Do. South	3,556	10,888	3,221
Do. West	6,836	6,933	5,850
Total	51,395	52,476	53,568
Third Circle.			
Cuddapah, North	2,169	1,570	1,772
Do. South	2,021	1,635	1,585
Do. West	8,449	6,953	7,842
Nellore	8,793	7,855	8,423
Chingleput	4,894	3,540	3,656
Chittoor	11,120	9,909	9,461
Vellore, North	5,418	6,993	5,936
Total	42,864	38,455	38,675
Fourth Circle.			
Vellore, South	6,400	6,443	6,721
Do. West	3,319	2,563	3,092
Salem, East	4,481	4,996	4,485
Do. North	814	433	805
Do. Central	1,303	2,715	2,486
Do. South	7,866	3,892	6,148
Total	* 24,183	21,042	23,737
Fifth Circle.			
Kollegal	3,886	2,438	2,421
Coimbatore, North	3,662	2,556	3,796
Do. South	587	300	585
Madura	5,218	3,811	4,869
Tinnevelly	2,559	1,717	2,751
Total	15,912	10,822	14,422
Sixth Circle.			
Mangalore, North	436	342	416
Do. South	406	587	439
Malabar, North	52	15	71
Do. South	256	Nil.	327
The Nilgiris	268	330	436
Central Coimbatore	2,274	1,447	1,729
Total	3,692	2,721	3,418
Grand total, Presidency	144,849	131,403	141,312

* Increase of 70 is due to revised figures from the divisions as reconstituted.

Annual Form No. 65.

Forest Department, Madras Presidency.

Area of reserved forests and reserved lands during 1920-21.

Districts.	Area of reserved forests.						Area of reserved lands.						Total area of reserved forests and reserved lands in square miles.
	Area on 1st July 1920.		Added during the year.	Excluded during the year.	Area on 31st March 1921.		Area on 1st July 1920.		Added during the year.	Excluded during the year.	Area on 31st March 1921.		
	Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.	Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
First Circle.													
Ganjam	398,955	623	1,280	..	400,235	(*m*) 626	1,347	2	..	(*b*) 1,280	67	(*a*) ..	626
Vizagapatam	196,907	308	84	..	196,991	308	1,413	2	..	(*b*) 84 (*d*) 2	(*c*) 1,313 (*e*) 14	2	310
Godavari, Upper	340,060	531	34,375	..	374,435	585	193,776	303	..	(*b*) 34,375 (*d*) 1,568	1,57,833	247	832
Do. Lower	255,409	399	..	..	255,409	399	58,841	92	..	(*f*) 2,753	56,088	87	486
Kistna	169,196	264	..	..	169,196	264	381	1	..	..	(*e*) 381	1	265
Total ..	1,360,527	2,125	35,739	..	1,396,266	2,182	255,758	400	..	40,062	215,696	337	2,519
Second Circle.													
Bellary	365,766	572	..	..	365,766	572	1,899	3	..	..	1,899	3	575
Anantapur	477,770	747	..	..	477,770	747	..	..	..	..	..	..	747
Guntur	512,230	800	..	(*h*) 663	511,567	799	..	..	3	..	3	0·0045	799
Kurnool, East	620,784	970	..	..	620,784	970	..	..	..	..	..	..	970
Do. South	486,664	761	..	..	486,664	(*g*) 760	..	..	..	..	..	..	760
Do. West	548,554	857	..	(*i*) 1,187	547,367	855	..	..	..	..	..	..	855
Total ..	3,011,768	4,707	..	1,850	3,009,918	4,703	1,899	3	3	..	1,902	3 0045 or 3	4,706
Third Circle.													
Cuddapah, North	381,229	596	..	..	381,229	596	324	1	..	..	324	..	596
Do. South	295,503	462	(*j*) 51	..	295,554	462	111	..	..	(*j*) 51	60	..	462
Do. West	479,010	748	(*j*) 1,771	(*k*) 3	480,778	751	2,284 (*f*) —5	4	..	(*j*) 1,771	508	1	752
Nellore	460,332	719	(*j*) 37 (*f*) 41	(*k*) 676 (*f*) 273	459,461	718	6,823	11	(*f*) 1	(*j*) 37 (*l*) 3	6,784	11	729
Chingleput	132,217	207	(*j*) 37	(*k*) 2,178	130,076	203	37	..	..	(*j*) 37	..	..	203
Chittoor	528,313	825	..	..	528,313	825	3	..	12	..	15	..	825
Vellore, North	293,247	458	(*j*) 163	(*k*) 123	293,287	458	160	..	(*f*) 3	(*j*) 163	..	..	458
Total ..	2,569,851	4,015	(*j*) 2,059 (*f*) 41	(*k*) 2,980 (*f*) 273	2,568,698	4,018	9,742 (*f*) —5	16	12 (*f*) 4	(*j*) 2,059 (*l*) 3	7,691	12	4,025

(*a*) Less than half a square mile.
(*b*) Transferred to reserved forests.
(*c*) Leased forests.
(*d*) Excluded at settlement.
(*e*) Notified under section 26 of the Forest Act.
(*f*) Rectification of area.
(*g*) The correct area was 760·42 square miles, which has now been taken as 760 square miles as the fraction is less than ½ square mile.
(*h*) Disafforested for grant to depressed classes for cultivation.
(*i*) Disafforested on account of inconvenience caused to adjoining villagers owing to the close proximity to village-sites.
(*j*) Notified under Section 16.
(*k*) Disafforested.
(*l*) Area given up as unnecessary.
(*m*) Revised figure.

Area of reserved forests and reserved lands during 1920-21—*cont.*

Districts.	Area of reserved forests.						Area of reserved lands.						Total area of reserved forests and reserved lands in square miles.
	Area on 1st July 1920.		Added during the year.	Excluded or transferred to other districts.	Area on 31st March 1921.		Area on 1st July 1920.		Added during the year.	Excluded during the year.	Area on 31st March 1921.		
	Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.	Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Fourth Circle.													
Vellore, South	309,208	483	..	(*a*) 1,036	308,172	481	349	1	9	..	358	1	482
Do. West	244,858	383	..	..	244,858	383	42	(*d*) ..	..	..	42	..	383
Salem, East	376,675	588	(*a*) 60	(*e*) 8,956 (*a*) + 1	367,778	575	7,485	12	..	..	7,485	12	587
Do. North	333,775	521	..	..	333,775	521	..	..	18	..	18	(*d*) ..	521
Do. Central	263,546	412	178	..	263,724	412	7,818	12	244	(*f*) 178	7,884	12	424
Do. South	216,898	339	..	..	216,898	339	11,812	18	(*b*) 533	(*b*) 264	12,081	19	358
Total ..	1,744,960	2,726	238	9,993	1,735,205	2,711	27,506	43	804	442	27,868	44	2,755
Fifth Circle.													
Kollegal	467,703	731	..	..	467,703	731	..	..	..	..	..	..	731
Coimbatore, North ..	586,839	917	..	(*a*) 169	586,670	916	..	..	..	..	..	..	916
Do. South ..	290,388	454	..	..	290,388	454	..	..	..	..	..	..	454
Madura	422,352	660	..	(*a*) 3	422,349	660	..	..	..	..	..	..	660
Tinnevelly	271,874	425	..	..	271,874	425	1,302	2	..	..	1,302	2	427
Total ..	2,039,156	3,187	..	172	2,038,984	3,186	1,302	2	..	..	1,302	2	3,188
Sixth Circle.													
Mangalore, North	232,059	362	8	(*h*) 2,091	229,976	360	8	..	..	(*f*) 8	..	..	360
Do. South	278,800	436	2,091	..	280,891	439	..	..	..	..	..	..	439
Malabar, North	168,424	263	..	..	168,424	263	22	..	..	..	22	..	263
Do. South	92,231	144	..	..	92,231	144	12,854	20	..	..	12,854	20	164
The Nilgiris	298,679	467	77 3,767 35,705	(*a*) 3,000 (*g*) 35,705	263,818	412	49,318 (*k*) 2,851	77 4	486	(*f*) 77	42,727 (*k*) 2,851	78 4	494
Coimbatore, Central ..	231,769	362	(*f*) 67 10	(*i*) 3,767	263,784	412	10	..	..	(*f*) 10	..	..	412
Total ..	1,301,962	2,034	41,725	44,563	1,299,124	2,030	65,063	101	486	95	65,454	102	2,132
Grand total, Presidency .	12,028,224	18,794	79,802	59,831	12,048,195	18,825	361,265	565	1,309	42,661	319,913	509	19,325

NOTE—The changes in the opening balance are due to the readjustment of divisions—

(*a*) Sixty acres of Kangiruppu II bit (East Salem) omitted to be included in the previous return, has been added now, and ·92 or 1 acre shown in excess in the previous year was omitted in this return so as to tally with the areas of reserved forests in B. P. F. No. 154, dated 10th November 1916.

(*b*) Changes in areas necessitated during settlement.
(*c*) Disforested.
(*d*) Less than a square mile.
(*e*) Area of Tanjore Forests handed over to the Collector.
(*f*) Transferred to reserved forests.
(*g*) Transferred to Central Coimbatore.
(*h*) Transferred to Mangalore, South.
(*i*) Transferred to the Nilgiris.
(*j*) Rectification of area.
(*k*) Toda patta lands.

Appendix to Form No. 65.

Details of classification of forests in the several districts in the Presidency.

District.	Area of reserved forests.	Details of classification in square miles.					
		I	II	III	IV	V	VI
Ganjam	626	389	230	(a)	7	..	..
Vizagapatam	308	211	72	(a)	7	18	..
Godavari (Upper)	585	217	368	..	..	..	..
Do. (Lower)	399	84	171	..	78	66	..
Kistna	264	22	86	(a)	3	153	..
Bellary	572	36	257	13	128	138	..
Guntur	799	..	..	5	700	94	..
Anantapur	747	..	306	..	389	52	..
Kurnool (East)	970	178	435	..	231	126	..
Do. (South)	760	281	287	..	190	2	..
Do. (West)	855	487	298	(a)	64	6	..
Cuddapah (North)	596	568	..	3	25	..	..
Do. (South)	462	431	2	..	29	..	..
Do. (West)	751	270	225	1	212	43	..
Nellore	718	172	164	4	326	52	..
Chingleput	203	..	40	..	146	17	..
Chittoor	825	267	331	1	17	209	..
Vellore (North)	458	67	320	4	7	59	1
Do. (South)	481	31	394	..	4	50	2
Do. (West)	383	23	342	..	..	7	11
Salem (East)	575	316	134	..	54	61	10
Do. (North)	521	..	418	..	103	..	..
Do. (Central)	412	87	214	1	90	20	..
Do. (South)	339	203	55	..	..	74	7
Kollegal	731	543	141	..	43	4	..
Coimbatore (North)	916	873	43	..	..	..	..
Do. (South)	454	(b) 375	62	..	12	5	..
Madura	660	247	399	..	..	14	..
Tinnevelly	425	196	197	..	14	6	12
Mangalore (North)	360	276	35	1	48	..	..
Do. (South)	439	254	67	..	118	..	..
Wynaad	263	226	37	..	..	..	..
Nilambur	(c) 140	129	11	..	..	..	..
Palghat	(c) 412	157	168	..	63	14	..
The Nilgiris	(d) 412	337	57	4	12	..	..
Total	18,821	7,953	6,366	37	3,120	1,290	43

(a) Less than one square mile. (b) Includes 27 square miles of leased forests (Tekkadi forests).
(c) Three reserves with an area of 10 square miles have since been added and have not yet been classified.
(d) Two square miles of forests in scattered bits not classified.
(e) The difference of 4 square miles between the area given in the statement and that in Form 65 has not been explained.

NOTE.—The disposal of class VI reserves in West Vellore, East Salem, South Salem and Tinnevelly Divisions is under correspondence with local officers. In the case of Trichinopoly and South Arcot reserves now included in East and South Salem Divisions, the disposal is pending completion of survey.

ANNUAL FORM No. 66.

Forest Department, Madras Presidency.

Progress made in forest settlements during the year 1920–21.

Forest district.	Name of forest.	Area in square miles.			Cost during the year.		Entire cost per square mile of areas finally settled.	Government notification of settlement.	
		Finally settled during the year.	In hand at commencement of the year.	Taken in hand during the year.	In forest accounts.	In other accounts.		Number.	Date.
	First Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	RS.	RS.			
Ganjam	Block I, Part of Galleri extension No. I.	0·057	..	..	..	..	..	200	21st June 1920.
	Block II, Galleri extension No. I.	0·168	..	..	..	..	..		
	Block III, Galleri extension No. I.	0·029	..	..	..	..	..		
	Block IV, Galleri extension No. I.	1·060	..	..	..	..	..		
	Block V, Kullada extension No. I.	0·685	..	..	..	..	..		
	Chendragiri extension (Kutnikuppa bit A/2)	..	0·105	..	6	1,961	..	..	..
Visagapatam.	Madalammakonda extension block I.	0·056	..	..	28	..	..	365	4th Dec. 1920.
	Dharakonda extension block I.	0·078	..	..	..	..	..	30	28th Jan. 1921.
Godavari, Upper.	Nugur	..	246·610	..	..	..	..	..	..
	Cherla	53·710 (a) 2·450	..	..	..	..	..	174	22nd May 1920.
Godavari, Lower.	Coringa extension	..	75·192 (b) 4·300	..	..	..	..	..	..
	Birampalli	..	2·804	..	..	..	..	..	..
	Vemulakonda	..	5·244	..	..	..	..	..	..
	Palam	..	2·083	..	..	..	..	..	..
	Nurupudi	..	2·315	..	..	..	..	..	..
	Total	55·843 (a) 2·450	334·358 (b) 4·300	..	34	1,961	..	..	....

(a) Excluded at settlement. (b) Rectification of area.

Progress made in forest settlements during the year 1920–21—*cont.*

Forest district.	Name of forest.	Area in square miles.			Cost during the year.		Entire cost per square mile of areas finally settled.	Government notification of settlement	
		Finally settled during the year.	In hand at commencement of the year.	Taken in hand during the year.	In forest accounts.	In other accounts.		Number.	Date.
	Second Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	RS.				
Bellary ..	Daroji tank shore	..	2·89	..	..	..	..	..	..
	Addition of enclosures in Jangikalgutta, Jittinakatta and Sogi reserves.	..	0·072	..	2,344	..	..	..	..
Guntur ..	Addition of enclosure in Nizampatnam reserved forest.	..	..	0·0045	..	..	..	..	..
	Total ..	..	2·962	0·0045	2,344	..	..	..	..
	Third Circle.								
Cuddapah, North.	Dasaripalli	..	0·16	..	..	..	..	..	..
	Kalasapad extension	..	0·027	..	688	..	..	..	..
	Dasarapalli extension ..	..	0·3	..	166	..	..	..	..
	Lankamalai extension ..	..	0·02	..	38	..	..	..	..
	Lankamalai	..	0·002	..	..	..	..	..	..
Cuddapah, South.	Chitvel extension B	0·03	..	..	..	..	..	278	30th Aug. 1920.
	Cheyyavaram extension ..	0·045	..	..	..	..	..	223	5th July 1920.
	Chitvel	0·005	..	..	..	..	..	278	30th Aug. 1920.
	Kodivengammabhavi Reserved Forest.	..	..	0·547	565	..	..	..	..
	Seshachallam Rollamadugu Reserved Forest.	..	..	0·038	..	..	..	..	..
Cuddapah, West.	Addition to Palkonda extension-Putlampalli shrotrieum.	2·76	..	..	..	..	..	181	1st June 1920.
	Fields of Hasanapuram village within Palakonda R.F.	..	0·349	..	34	..	..	..	..
	Fields of Vangimalla within Palakonda extension C.	..	0·209	..	5	..	..	..	..
	Fields of Hasanapuram village within Palakonda extension C.	..	0·065	..	..	..	..	..	..
	Fields of Gopagudipalli village within Idupulapaya R.F.	..	0·012	..	..	..	..	..	..
	Fields of Guvalcheruva village within Idupulapaya R.F.	..	0·007	..	..	..	..	..	..
	Fields of Chtlakampalli village within Idupulapaya R.F.	..	0·006	..	..	..	..	..	..
	Fields of Chenchuvaripenta village within Idupulapaya R.F.	..	0·014	..	..	..	..	..	..
	Fields of Brahmana Erragudipalli within Idupulapaya R.F.	..	0·031	..	..	..	..	..	..
	Do. do.	..	0·062	..	..	..	..	..	..
	Fields in Machupalli within Kanamalapalli extension R.F.	0·0049	..	..	..	..	..	214	30th June 1920.
	Fields in Chintarajupalli in Vontimitta extension R.F.	..	0·045	..	166	..	..	..	..
Nellore ..	Addition to Yellaseri R.F. ..	0·026	..	..	..	..	..	222	7th July 1920.
	Do. Tummalapenta, West.	..	0·015	0·002	..	..	..	..	..
	Do. Tummalapenta, North.	..	0·005 —0·005	..	..	..	..	..	..
	Do. Chinna Annalur extension.	0·015	..	..	..	..	..	364	26th Nov. 1920.
	Do. Veligandla ..	0·015	..	..	767	..	..	364	Do.
	Rapur Veligandla A-1 extension.	..	10·586	..	..	..	..	..	..
Chingleput.	Kattankolattur extension II.	0·017	..	..	..	..	..	189	11th June 1920.
	Tirukalikundram extension II.	0·041	..	..	..	..	..	314	6th Oct. 1920.
Chittoor ..	Addition to Santhapet extension A.	..	0·005	..	437	..	..	..	..
	Palmaner reserve extension ..	..	..	0·012	..	..	..	..	..
	Peddanaigdrug reserve extension.	..	..	0·006	..	..	..	..	..
Vellore, North.	Ammundi	0·25	..	..	..	..	..	227	7th July 1920.
	Total ..	3·2079	11·9150	0·605	2,866	..	..	..	..

* Dropped.

Progress made in forest settlements during the year 1920–21—*cont.*

Forest district.	Name of forest.	Area in square miles.			Cost during year.		Entire cost per square mile of areas finally settled.	Government notification of settlement	
		Finally settled during year.	In hand at commencement of year.	Taken in hand during year.	In forest accounts.	In other accounts.		Number.	Date.
	Fourth Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	RS.				
Vellore, South.	Malayalam	..	(*a*) 0·40	..	..	..	..	..	..
	Santavasal	..	0·15	..	..	..	..	..	..
	Eraiyur	..	..	0·0072	..	..	..	..	Chief Conservator's Proceedings No. 439 Mis., dated 27th Aug. 1920.
	Kavuthimalai	..	..	0·0062	..	..	..	..	Chief Conservator's Proceedings No. 10 Mis., dated 8th Jan. 1921.
West, Vellore.	Váratanapalli extension ..	..	0·07	..	..	..	..	..	..
East, Salem.	Arana and Tirthagiri	..	5·92	..	..	..	..	..	..
	Pallipatti extension	..	5·77	..	..	..	..	..	..
North, Salem.	Pennagaram extension ..	..	..	0·0280	..	..	..	414 Mis.	12th Aug. 1920. G.O. (Spl.) No. 1437 Mis., 5th Aug. 1920.
Central, Salem.	Kavaramalai	0·01	0·01	..	..	..	..	..	Chief Conservator's Proceedings No. 8, dated 8th Jan. 1921.
South, Salem.	Sholapadi A extension	0·27	0·27	..	..	..	..	410	11th Aug. 1920.
	Jarugumalai	..	11·94	..	..	..	..	..	..
	Kanjeri extension	..	..	0·3812	..	..	..	411	11th Aug. 1920.
	Methalamalai	..	0·01	..	..	..	..	..	..
	Veppadi	..							
	Vedambium	..							
	Vanjarai	..							
	Periasholā	..	(*b*) 18·87	..	..	..	..	..	..
	Atturmanmalai	..							
	Vengaimudi	..							
	Total ..	0·28	43·41	0·4226	..	..	..	..	..
	Fifth Circle.								
Tinnevelly.	Karumandiamman Shola and Mahendragiri estates.	..	0·16	..	..	..	..	..	....
	Mullkadu block	..	1·48	..	..	..	..	..	....
	Hare Island for Tuticorin harbour.	..	0·22	..	..	..	..	..	....
	Punnadi Island for Tuticorin harbour.	..	0·16	..	..	..	..	..	....
	Total ..	..	2·02	..	..	..	..	..	....
	Sixth Circle.								
Mangalore North.	Naravi extension No. VIII ..	0·012	0·012	..	..	..	..	33	14th Mar. 1921.
The Nilgiris.	Arambi addition No. I ..	0·12	0·12	..	..	..	..	224	6th July 1920.
	Mudumalai	..	74·69	..	..	..	..	..	....
	Addition to Kalhatti	..	0·17	..	..	..	..	..	....
	Do. to Wenlock downs.	..	0·23	..	..	..	..	..	....
	Do. to Nedugula ..	..	..	0·06	..	..	..	..	....
	Do. to Nadukaduhalla.	..	..	0·27	..	..	..	..	....
	Do. to Attukkadu Shola.	..	..	0·05	..	..	..	..	....
	Do. to Doddakavu ..	..	..	0·08	..	..	..	..	....
	Do. to No. III to Kodanad Valley Shola.	..	..	0·13	..	..	..	..	....
	Addition No. II to Madanad.	..	..	0·16	..	..	..	..	....
Coimbatore, Central.	Thamburatti Pottai addition No. I.	(*c*) 0·012	·011	..	115	..	..	363	29th Nov. 1920.
	Nellimalai addition No. I ..	0·003	·003	..	..	..	..	307	1st Oct. 1920.
	Total ..	0·147	75·236	0·75	115	..	..	..	..
	Grand total, Presidency ..	59·477	474·196	1·782	5,359	1,961	..	..	..

(*a*) Figure furnished in the last year's return was wrong. (*b*) Correct area as per settlement.
(*c*) Rectification of area at settlement.

Annual Form No. 67.

Forest Department, Madras Presidency.

Record of demarcation and maintenance of boundaries during 1920-21.

District.	Length of boundaries artificially demarcated during the year.	Length of previously existing boundaries repaired.	Length of previously existing boundaries not repaired.	Total length of artificially marked boundaries at the close of the year.	Length of boundaries still to be demarcated at the close of the year.	Length of natural boundaries not requiring artificial marks.	Total length of boundaries at the close of the year.	Expenditure on demarcation during the year.	
								On new work.	On repairs.
First Circle.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	RS.	RS.
Ganjam	..	74 (*a*) 1,294	..	1,368	..	80	1,448	(*b*) 15 (*c*) 16	159
Vizagapatam ..	*	9 (*a*) 555	..	564	..	19	583	17	106 (*b*) 20
Godavari, Upper ..	16	(*c*) 468	..	(*d*) 484	..	151	635	378	(*b*) 724
Do. Lower ..	..	(*a*) 723	..	723	..	51	774	..	106 (*b*) 176
Kistna	..	15 (*a*) 420	112	547	..	40	587	..	366
Total ..	16	566 (*a*) 2,992	112	3,686	..	341	4,027	(*b*) 15 (*c*) 16 395	737 (*b*) 920
Second Circle.									
Bellary	..	(*d*) 1,375 (*e*) 129	..	1,504	(*c*) 11	..	1,515	..	1,715
Anantapur	..	(*d*) 1,041 (*e*) 148	598	1,787	...	(*a*) 34	1,821	..	1,118
Guntur	..	6	1,303	1,309	..	..	1,309	..	65
Kurnool, East ..	4	(*d*) 562	..	611	1	48	660	47	..
Do. South ..		(*f*) 45							
Do. West ..	..	604	28	632	..	5	637	..	..
Total ..	..	(*d*) 280 (*e*) 308	328	916	..	100	(*f*)1,016	..	492
	4	4,498	2,257	6,759	12	187	6,958	47	3,390
Third Circle.									
Cuddapah, North ..									
Do. South ..	..	(*b*) 228	332	560	..	13	573	..	..
Do. West ..	..	(*b*) 287	39	326	..	40	366	..	..
Nellore	..	(*b*) 354	1,045	1,399	..	22	1,421	..	30
Chingleput	..	(*b*) 1,362	610 (*a*)—14	1,958	..	84	2,042	44	1,230
Chittoor	..	(*b*) 660 194	..	854	..	..	854	209	1,180
Vellore, North ..	1	41 (*b*) 1,273	131	1,446	..	60	1,506	10	1,036
	..	(*b*) 1,072 (*a*) — 3	..	1,069	1	11	1,081	..	91
Total .	1	5,468	2,143	7,612	1	230	7,843	263	3,567

Note for First Circle.

* Less than one mile.
(*a*) Cleared by subordinates free of cost.
(*b*) Cost of works other than boundaries of forests finally notified.
(*c*) Cost of cutting lines preliminary to permanant demarcation.
(*d*) Revised figures furnished by the District Forest Officer.
(*e*) Cleared by hill tribes for fire protection, the cost being debited to A-VIII (*f*).

Note for Second Circle.

(*a*) Transferred from columns Nos. 6 to 7 (ridge line between Anantapur and Cuddapah ordered by Chief Conservator to be unnecessary).
(*b*) Decrease of two miles due to disafforestation of a portion of Gani reserved forest.
(*c*) Boundary between disafforested and remaining portions of reserves.
(*d*) Length of boundaries cleared by subordinates free of cost.
(*e*) Do. do. at cost.
(*f*) Do. by panchayatdars free of cost.

Note for Third Circle.

(*a*) Deduction owing to disafforestation.
(*b*) Cleared by subordinates free of cost.

Record of demarcation and maintenance of boundaries during 1920-21—*cont.*

District.	Length of boundaries artificially demarcated during the year.	Length of previously existing boundaries repaired.	Length of previously existing boundaries not repaired.	Total length of artificially marked boundaries at the close of the year.	Length of boundaries still to be demarcated at the close of the year.	Length of natural boundaries not requiring artificial marks.	Total length of boundaries at the close of the year.	Expenditure on demarcation during the year.	
								On new work.	On repairs.
Fourth Circle.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	RS.	RS.
Vellore, South ..	..	921 (*a*) —6	..	915	..	15	930	..	40
Do. West ..	..	592	37	629	..	13	642	(*e*) 100	20
Salem, East ..	..	1,119	102	1,221	..	5	1,226	..	33
Do. North ..	..	424	60	484	..	116	600	..	..
Do. Central ..	(*b*)	305	423	728	..	15	743	38	15
Do. South ..	3	905	76	984	48	..	1,032	18 (*d*) +49	164
Total ..	3	4,266 (*a*) — 6	698	4,961	48	164	5,173	156 (*d*) +49	272
Fifth Circle.									
Kollegal	27	8 (*a*) 174	..	209	183	87	479	640	36
Coimbatore, North ..	—	(*a*) 496	83	579	101	89	769	..	3
Do. South ..	..	(*a*) 128 (*b*) 24	76	228	..	72	300	..	16
Madura	*	(*a*) 1,020	538	1,558	1	178	1,737	165	(*c*) 224 (*d*) + 26
Tinnevelly	..	..	491	491	..	14	505	..	97
Total ..	27	8 (*a*) 1,818 (*b*) 24	1,188	3,065	285	440	3,790	805	402
Sixth Circle.									
Mangalore, North ..	..	18	1,215 (*d*)— 5	1,228	..	103	1,331	..	52
Do. South ..	..	..	1,130 5	1,135	46	101	1,282	..	(*i*) 66
Malabar, North ..	(*a*) 13	(*b*) 186 (*c*) 26	981	1,206	2	36	1,244	1,041	..
Do. South ..	(*a*) 4	(*b*) 67	60	131	20	55	206	565	142
The Nilgiris	..	1 (*c*) 93	1,492 (*e*) —85 (*f*) 10	1,511	..	299	1,810	..	36 (*g*) 667 (*h*) 78
Central Coimbatore ..	11	(*a*) 52	519 85	667	16	50	733	390	..
Total ..	28	19 (*b*) 253 (*c*) 171	5,407	5,878	84	644	6,606	1,996	1,041
Grand total, Presidency	79	29,077	11,805	31,961	430	2,096	34,397	3,742	10,32

Note for Fourth Circle.

Owing to readjustment of divisions the figures given by the District Forest Officers have been accepted.
(*a*) Deduction is due to disafforestation.
(*b*) Less than half a mile.
(*c*) Cost of cutting lines and erecting cairns on the delimitation of hill villages of Pudurnad in the Javadis.
(*d*) Amount spent on the demarcation of proposed Paithur block.

Note for Fifth Circle.

* Less than a mile.
(*a*) Cleared by subordinates free of cost.
(*b*) Cleared for fire protection, the cost being debited to *A*-VIII (*f*).
(*c*) Repairs to cairns.
(*d*) Added to tally with Accountant-General's audited figures.

Note for Sixth Circle.

(*a*) Included in column 4 of the last year's return.
(*b*) Cleared for fire protection, the cost being debited to A-VIII (*f*).
(*c*) Cleared by subordinates free of cost.
(*d*) Transferred to Mangalore, South.
(*e*) Transferred to Central Coimbatore.
(*f*) Erroneously shown in column 6 of the last year's return.
(*g*) Cost of building cairns.
(*h*) Erroneous debits relating to A.I. (*b*) and VIII (*f*).
(*i*) Cost of preliminary demarcation.

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FOREST DEPARTMENT.

ANNUAL FORM No. 69.

Forest Department, Madras Presidency.

Progress made in working-plans during 1920-21.

District.	Areas for which working-plans have been completed and approved by the Chief Conservator.		Areas for which working-plans are being compiled or have been compiled but not sanctioned.		Areas for which working-plans have still to be taken in hand.	Areas for which working-plans are not at present required.	Total forest area as per Form No. 65.
	At commencement of the year.	During the year.	At commencement of the year.	Taken in hand during the year.			
			Reserved forests.				
First Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Ganjām	624	2	..	..	..	..	626
Vizagapatam ..	186	..	62	..	42	18	308
Gōdāvari, Upper ..	165	..	..	..	420	..	585
Do. Lower ..	292	..	..	..	107	..	399
Kistna	240	..	..	..	..	24	264
Total ..	1,507	2	62	..	569	42	2,182
			Reserved lands.				
Vizagapatam ..	..	..	..	..	..	(*a*) 2	2
Gōdāvari, Upper ..	..	..	..	..	..	247	247
Do. Lower ..	..	..	..	..	87	..	87
Kistna	..	..	..	..	..	1	1
Total ..	..	..	..	..	87	250	337
			Reserved forests.				
Second Circle.							
Bellary	51	..	88	..	290	143	572
Anantapur ..	386	14	..	49	298	(*a*) 3	747
Guntūr	..	22	237	..	537	..	799
Kurnool, East ..	147	..	176	..	647	..	970
Do. South ..	679	..	81	..	..	..	760
Do. West ..	456	..	..	2	..	397	855
Total ..	1,719	36	582	51	1,772	543	4,703
			Reserved lands.				
Bellary	..	..	2	..	..	1	3
			Reserved forests and lands.				
Third Circle.							
Cuddapah, North ..	49 (*a*) —3	..	17	..	(*b*) 533	..	596
Do. South ..	107 (*a*) —11	..	..	..	..	366	462
Do. West ..	35	..	27	38	2	650	752
Nellore	12	(*b*) 83	230 (*a*) — 35 (*b*) — 83	..	394	128	729
Chingleput ..	185 (*a*) —1	..	..	..	..	19	203
Chittoor	33	..	95	176	521	..	825
Vellore, North ..	410	..	2	..	..	46	458
Total ..	816	83	253	214	1,450	1,209	4,025
			Reserved forests.				
Fourth Circle.							
Vellore, South ..	*415	..	* ..	* ..	* 66	* ..	* 481
Do. West ..	383	..	..	..	..	..	383
Salem, East ..	406	..	64	..	..	105	575
Do. North ..	96	..	216	..	209	..	521
Do. Central ..	263	..	..	..	149	..	412
Do. South ..	231	..	19	2	45	42	339
Total ..	1,794	..	299	2	469	147	2,711 (*f*) 44

Note for First Circle. (*a*) Leased forests not requiring working-plans.

Note for Second Circle.—(*a*) Tentative for Tadapalli reserve forest cancelled.

Note for Third Circle.— (*a*) Area cancelled or disafforested. (*b*) Area for which working-plans have been sanctioned during the year.

Note for Fourth Circle.—* Compared with the last year's return, the changes in the figures furnished by the District Forest Officers are due to re-adjustment of Forest Divisions.

(*f*) Details are not given for 44 square miles of reserved land.

Progress made in working-plans during 1920-21—*cont.*

District.	Areas for which working-plans have been completed and approved by the Chief Conservator.		Areas for which working-plans are being compiled or have been compiled but not sanctioned.		Areas for which working-plans have still to be taken in hand.	Areas for which working-plans are not at present required.	Total forest area as per Form No. 65.
	At commencement of the year.	During the year.	At commencement of the year.	Taken in hand during the year.			
			Reserved forests.				
Fifth Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Kollegal	53	..	22	..	160	496	731
Coimbatore, North.	330	..	30	..	556	..	916
Do. South.	93	..	..	..	334	..	427
Madura	351	..	..	..	297	12	660
Tinnevelly ..	* 233	..	..	..	16	* 176	(*d*) 425
Total ..	1,060	..	52	..	1,363	684	3,159 (*d*) 2
			Leased forests.				
Coimbatore, South.	27	..	..	..	..	..	27
Total ..	1,087	..	53	..	1,363	684	3,186 (*d*) 2
			Reserved forests.				
Sixth Circle.							
Mangalore, North.	358 (*a*) — 3	..	..	..	5	..	360
Do. South.	436 3	..	..	..	..	..	439
Malabar, North ..	178	..	..	..	85	..	263
Do. South ..	7	..	96	..	..	37	140
The Nilgiris ..	107 (*b*) — 44	..	..	..	..	349	* 412
Central Coimbatore.	165 44	..	..	..	98	105	412
Total ..	1,251	..	96	..	188	491	2,026
			Reserved lands.				
The Nilgiris ..	75	..	..	..	1	(*c*) 6	82
			Leased forests.				
Malabar, South ..	24	..	..	..	..	..	24
Total ..	..	..	..	..	..	..	..
Grand total, Presidency.	8274	121	1,344	267	5,899	3,374	19,279 (*d*) 46

Note for Fifth Circle.—* Revised area furnished by the District Forest Officer.

Note for Sixth Circle.—(*a*) Transferred to South Mangalore.
(*b*) Transferred to Central Coimbatore.
(*c*) Includes four square miles of Todapatta lands.
(*d*) Details are not given for 2 square miles of reserved land in the Tinnevelly district and 44 square miles of reserved land in the fourth circle.

Annual Form No. 7C.

Forest Department, Madras Presidency.

Communications and Buildings during 1920–21.

District.	Roads (including bridle-paths and culverts)				Buildings.		Other works.	
	New works.		Repairs.		Cost of new works.	Cost of repairs.	Cost of new works.	Cost of repairs.
	Length.	Cost.	Length.	Cost.				
First Circle.	M. F. CH.	Rs.	M. F. CH.	Rs.	Rs.	Rs.	Rs.	Rs.
Ganjam	6 1 1	4,349	49 5 5	1,884	55,256	3,043 (a) 1,342 + 39	77	5
Vizagapatam	10 6 0	1,608	17 6 0	535	974	1,738 (a) 940	30	38
Godavari, Upper ..	9 1 0	2,143	6 0 0	277	2,430	1,776 (a) 775	..	..
Do. Lower ..	..	..	47 2 0	1,796	2,599	3,184 (a) 1,729	..	..
Kistna	2 2 0	1,585	10 4 0	144	2,931	318 (a) 75	..	196
Total ..	28 2 1	9,685	131 1 5	4,636	64,190	14,959	127	239
Second Circle.								
Bellary	..	..	..	..	..	734 (a) 604	677	22
Anantapur	..	..	5 4 7	408	2,048	1,002 (a) 1,398	..	40
Guntur	11 0 0	730	4 0 0	467	1,367	171 (a) 835	558	..
Kurnool, East	14 1 0	979	43 3 0	1,963	2,507	844 (a) 909	253	15
Do. South	1 6 0	599	72 2 0	(b)2,593 2,200	400	3,038	..	386
Do. West	0 6 0	(c) 27	23 4 0	1,925 (b) 650	5,817	665 (d) 2 (a) 837	..	634
Total ..	27 5 0	2,335	148 3 7	10,207	12,139	11,039	1,488	1,097
Third Circle.								
Cuddapah, North ..	2 1 6	1,180	15 1 0	585	1,133	323 (a) 554	474	97
Do. South ..	7 13 1	3,883	42 0 1	3,512	4,591	1,098 (a) 237	494	11
Do. West ..	3 1 7	1,351	7 4 5	1,370	1,724	275 (a) 693	166	..
Nellore	13 0 50	187	2 0 40	148	2,108	627 (a) 1,035	354	109
Chingleput	3 6 0	451	14 9 0	1,917	..	396 (a) 1,317	434	207
Chittoor	16 4 0	1,989	21 4 0	2,573	2,011	3,843 (a) 1,214	199	12
Vellore, North	1 0 0	15	29 0 0	566	902	949 (a) 645	44	24
Total ..	48 1 64	9,056	132 2 46	10,671	12,469	13,206	2,165	460

Note of First Circle. * Added to agree with the Accountant-General's figures.
(a) Cost of establishment.

Note of Second Circle. (a) Represents establishment charges.
(b) Amount of contribution paid to Local Fund roads.
(c) Cost of alignment of six furlongs of roads.
(d) Cash recovery.

Note of Third Circle.—(a) Cost of establishment.

Communications and Buildings during 1920-21—*cont.*

District.	Roads (including bridle-paths and culverts)				Buildings.		Other works.	
	New works.		Repairs.		Cost of new works.	Cost of repairs.	Cost of new works.	Cost of repairs.
	Length.	Cost.	Length.	Cost.				
Fourth Circle.	M. F. CH.	RS.	M. F. CH.	RS.	RS.	RS.	RS.	RS.
Vellore, South	1 0 0	(*a*) 9	5 2 0	271 +(*d*) 1	66	1,004 (*b*) + 772 (*c*) + 261 (*d*) — 134	117	38 (*d*)+ 1
Do. West	..	(*a*) 53	26 6 0	586 (*d*)— 43	1,006	968 (*b*) + 241 (*d*) + 62	816	..
Salem, East	..	..	0 6 0	60 (*e*)— 3	..	79 (*b*) 788 (*e*) — 8 (*d*) — 16	..	29
Do. North	..	..	18 4 0	220 (*d*) —10	1,238	313 (*b*) 110 (*a*) + 1	..	..
Do. Central	..	..	12 6 0	271	..	1,207 (*b*) + 500 (*e*) — 1	14	..
Do. South	4 0 0	660	16 0 0	310 (*e*)— 2	1,557	473 (*b*) + 396	..	413
Forest Engineer	38 0 0	(*f*)1,36,990	14 0 0	3,070 (*d*)+277	..	..	..	..
Total ..	43 0 0	1,37,712	94 0 0	4,788 (*d*)+ 278 5,066 (*d*)— 58 5,008	3,867	7,016	947	476
Fifth Circle.								
Kollegal	16 6 0	2,014	56 7 0	1,616	1,880	379 (*b*) 436	141	84
Coimbatore, North ..	3 0 0	4,170	118 0 0	8,483	542	2,385 (*b*) 408	14	26
Do. South ..	..	(*c*) 704	38 2 0	5,196 (*b*) 459	4,501	1,491 (*b*) 246 (*c*) — 5	96	119
Madura	32 3 0	810	197 4 0	6,894 (*b*)1,127 (*d*) —81	1,424	1,927 (*b*) 1,706 (*d*) + 22	386	10
Tinnevelly	1 2 0	2,326	..	383	430	1,828 (*a*) 505	..	10
Forest Engineer	..	(*c*) 1,427 (*d*) 277	..	..	..	..	..	..
Direction	..	..	..	(*a*) —11	..	..	..	(*a*) —11
Total ..	53 3 0	11,728	410 5 0	24,066	8,777	11,328	637	238
Sixth Circle.								
Mangalore, North ..	3 0 0	1,316	25 0 0	528 (*a*) — 6	1,849	261 (*b*) 88 (*a*) — 7 (*g*) —50	48	39
Do. South ..	5 0 0	679	9 0 0	494	420	637	..	73
Malabar, North	(*f*) ..	110	110 0 0	2,447	2,591	294 (*b*) 231	512	14
Do. South	5 0 0	550	49 0 0	2,053	7,024	776	285	97
The Nilgiris	..	..	66 0 0	3,868	136	470	267	74
Central Coimbatore	11 0 0	51,715	5 0 0	4,964	10,490	1,222 (*b*) 118	1,799	110
Total ..	24 0 0	54,370	264 0 0	14,348	22,510	4,040	2,911	407
Grand total, Presidency.	224 3 65	2,24,886	1,180 3 58	68,936	123,952	61,588	8,275	2,967

(*a*) Cost of alignment.
(*b*) Cost of establishment.
(*c*) Insurance charges.
(*d*) Added or subtracted to tally with Accountant-General's audited figures.
(*e*) Cash recovery of service payments.
(*f*) Rs. 1,720 wrongly shown by the Accountant-General under A-VII (*b*) has been included.

Note of Fourth Circle.

Abstract.	New works.	Repairs.	Total.
	RS.	RS.	RS.
Roads and bridle-paths	1,37,712	5,008	1,42,720
Buildings	3,867	4,044 + 2,807 + 261 — 96	10,883
Other works	947	476	1,423

(*a*) Cash recovery of service payments.
(*b*) Cost of establishment.
(*c*) Expenditure on improvement to tram line.
(*d*) Added or deducted to tally with Accountant General's audited figures.
(*e*) Includes expenditure on the investigation of the new Mount Stuart Ghat Road, water-supply scheme, etc.
(*f*) Less than a mile.
(*g*) Erroneously debited to A VIII (*f*) in the audited figures.

ANNUAL FORM No. 71.

Forest Department, Madras Presidency.

Register of breaches of Forest Rules during 1920-21.

District.		Cases pending from 1919-20.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.
			Injury to forest by fire.	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
									Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
First Circle.															
Ganjam ..	A ..	* 71	..	71	4	3	78	149	111	343	13	213	124	556	25
	B ..	* 85	5	190	16	7	218	303	212	687	26	156	238	843	65
	C ..	..	58	20	..	..	78	..	..	..	..	..	..	..	..
Total	..	156	63	281	20	10	374	452	323	1,030	39	369	362	1,399	90
Vizagapatam.	A ..	† 26	..	82	5	2	89	115	82	259	7	28	89	287	26
	B ..	† 13	..	153	41	21	215	228	176	500	7	29	183	529	45
	C ..	..	29	3	..	..	32	..	..	..	..	..	..	..	..
Total	..	39	29	238	46	23	336	343	258	759	14	57	272	816	71
Godavari, Upper.	A ..	† 14	1	3	..	2	6	20	9	12	3	7	12	19	8
	B ..	† 16	..	58	..	4	62	78	47	144	22	65	69	209	9
	C ..	..	50	..	..	..	50	..	..	..	..	..	..	..	..
Total	..	30	51	61	..	6	118	98	56	156	25	72	81	228	17
Godavari, Lower.	A ..	† 24	..	36	1	12	49	73	40	80	6	27	46	107	27
	B ..	† 56	..	212	14	59	285	341	219	518	12	24	231	542	110
	C ..	..	38	1	..	3	42	..	..	..	..	..	..	..	..
Total	..	80	38	249	15	74	376	414	259	598	18	51	277	649	137
Kistna	A ..	† 35	..	109	37	14	160	195	161	620	18	56	179	676	16
	B ..	† 26	..	216	132	38	386	412	255	564	79	214	334	778	78
	C ..	..	3	16	6	..	25	..	..	..	..	..	..	..	..
Total	..	61	3	341	175	52	571	607	416	1,184	97	270	513	1,454	94
Total, First Circle.	A ..	170	1	301	47	33	382	552	403	1,314	47	331	450	1,645	102
	B ..	196	5	829	203	129	1,166	1,362	909	2,413	146	488	1,055	2,901	307
	C ..	..	178	40	6	3	227	..	..	..	..	..	..	..	..
Grand Total, First Circle.		366	184	1,170	256	165	1,775	1,914	1,312	3,727	193	819	1,505	4,546	409
Second Circle.															
Bellary ..	A ..	28	1	59	47	8	115	143	101	347	11	23	112	370	31
	B ..	136	..	227	280	29	536	672	384	950	79	365	463	1,315	209
	C ..	..	107	5	1	1	114	..	..	..	..	..	..	..	..
Total	..	164	108	291	328	38	765	815	485	1,297	90	388	575	1,685	240
Anantapur.	A ..	91	1	168	56	4	229	320	216	603	26	83	242	686	78
	B ..	85	1	353	151	9	514	599	469	857	34	115	503	972	96
	C ..	..	53	20	..	..	73	..	..	..	..	..	..	..	..
Total	..	176	55	541	207	13	816	919	685	1,460	60	198	745	1,658	174
Guntur ..	A ..	411	..	242	264	20	526	937	527	1,815	17	54	544	1,869	393
	B ..	424	..	631	614	62	1,307	1,731	1,080	3,377	12	32	1,092	3,409	639
	C ..	..	1	31	..	3	35	..	..	..	..	..	..	..	..
Total	..	835	1	904	878	85	1,868	2,668	1,607	5,192	29	86	1,636	5,278	1,032

A = Cases taken to Court. B = Cases compounded. C = Cases undetected.

* Revised figures furnished by the District Forest Officer.

† The variations between the closing balance of last year and these figures are due to transfers from B to A.

Register of breaches of Forest Rules during 1920-21—*cont.*

District.		Cases pending from 1919-20.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.
			Injury to forest by fire.	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
									Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Second Circle—cont.															
Kurnool, East.	A ..	* 40	..	27	41	..	68	108	87	240	13	115	100	355	8
	B ..	* 62	..	142	81	2	225	287	170	423	68	199	238	622	49
	C ..	..	9	3	..	..	12	..	..	..	..	..	..	..	..
	Total ..	102	9	172	122	2	305	395	257	663	81	314	338	977	57
Kurnool, South.	A ..	12	..	78	29	4	111	123	103	330	5	20	108	350	15
	B ..	24	..	155	75	6	236	260	209	476	† 17 9	79	235	555	25
	C ..	..	41	46	..	..	87	..	..	..	..	..	..	..	..
	Total ..	36	41	279	104	10	434	383	312	806	31	99	343	905	40
Kurnool, West.	A ..	58	..	194	49	19	262	320	224	576	8	67	232	643	88
	B ..	98	..	360	126	32	518	616	540	1,327	36	166	576	1,493	40
	C ..	..	13	26	2	..	41	..	..	..	..	..	..	..	..
	Total ..	(*a*) 156	13	580	177	51	821	936	764	1,903	44	233	808	2,136	128
Total, Second Circle.	A ..	640	2	768	486	55	1,311	1,951	1,258	3,911	80	362	1,338	4,273	613
	B ..	829	1	1,868	1,527	140	3,336	4,165	2,852	7,410	255	956	3,107	8,366	1,058
	C ..	..	224	131	3	4	362	..	..	..	..	..	..	..	..
Grand Total, Second Circle.		1,469	227	2,767	1,816	199	5,009	6,116	4,110	11,321	335	1,318	4,445	12,639	1,671
Third Circle.															
Cuddapah, North.	A ..	10	1	51	4	..	56	66	49	184	10	19	59	203	7
	B ..	69	..	247	54	27	328	397	263	479	36	95	299	574	98
	C ..	..	22	19	2	..	43	..	..	..	..	..	..	..	..
	Total ..	79	23	317	60	27	427	463	312	663	46	114	358	777	105
Cuddapah, South.	A ..	21	1	117	78	8	204	225	80	191	103	371	183	562	42
	B ..	9	..	78	32	..	119	119	101	262	4	12	105	274	14
	C ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total ..	30	1	195	110	8	314	344	181	453	107	383	288	836	56
Cuddapah, West.	A ..	125	5	164	72	11	252	377	163	384	39	99	202	483	175
	B ..	94	1	370	225	17	613	707	547	1,183	57	258	604	1,441	103
	C ..	..	..	29	1	..	30	..	..	..	..	..	..	..	..
	Total ..	219	6	563	298	28	895	1,084	710	1,567	96	357	806	1,924	278
Nellore ..	A ..	144	..	107	115	4	226	370	145	481	33	58	178	539	192
	B ..	325	..	379	504	5	888	1,213	660	1,848	96	203	756	2,051	457
	C ..	21	..	30	..	..	30	..	..	..	..	..	..	..	..
	Total ..	490	..	516	619	9	1,144	1,583	805	2,329	129	261	934	2,590	649
Chinglé-put.	A ..	63	..	147	54	2	203	266	227	550	6	9	233	559	33
	B ..	91	..	312	371	..	683	774	642	836	44	105	686	941	88
	C ..	..	1	1	..	..	2	..	..	..	..	..	..	..	..
	Total ..	154	1	460	425	2	888	1,040	869	1,386	50	114	919	1,500	121
Chittoor ..	A ..	50	..	129	147	67	343	393	147	381	125	204	272	585	121
	B ..	97	..	342	294	125	761	858	733	1,297	67	158	800	1,455	58
	C ..	..	40	5	6	2	53	..	..	..	..	..	..	..	..
	Total ..	147	40	476	447	194	1,157	1,251	880	1,678	192	362	1,072	2,040	179

A = Cases taken to Court. B = Cases compounded. C = Cases undetected.

* The variations between the closing balance of last year and that figures due to transfer from B to A.

† Cases withdrawn by District Forest Officer.

(*a*) The difference due to 27 cases relating to reserved forests of 1919-20 wrongly shown as pending at close of the year and to three cases relating to unreserved lands omitted in the return of 1919-20.

Register of breaches of Forest Rules during 1920-21—*cont.*

District.		Cases pending from 1919-20.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.
			Injury to forest by fire.	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
									Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Third Circle—cont.															
Vellore, North.	A ..	48	..	278	218	3	499	547	261	662	18	53	279	715	268
	B ..	191	..	598	376	5	979	1,170	963	2,090	26	71	989	2,161	181
	C ..	..	24	2	..	..	26	..	..	..	..	..	..	..	..
Total ..		239	24	878	594	8	1,504	1,717	1,224	2,752	44	124	1,268	2,876	449
Total, Third Circle.	A ..	461	7	993	688	95	1,783	2,244	1,072	2,833	334	813	1,406	3,646	838
	B ..	876	1	2,326	1,856	179	4,362	5,238	3,909	7,995	330	902	4,239	8,897	999
	C ..	21	87	86	9	2	184	...	..	..	..	..	..	..	..
Grand Total, Third Circle.		1,358	95	3,405	2,553	276	6,329	7,482	4,981	10,828	664	1,715	5,645	12,543	1,837
Fourth Circle.															
Vellore, South.	A ..	57	2	170	50	8	230	287	257	577	7	41	264	618	23
	B ..	274	..	954	275	28	1,257	1,531	865	1,987	(a) 124	246	989	2,233	542
	C ..	..	10	20	..	2	32	..	..	..	..	..	..	..	..
Total ..		331	12	1,144	325	38	1,519	1,818	1,122	2,564	131	287	1,253	2,851	565
Vellore, West.	A ..	80	..	113	28	11	152	232	100	242	4	16	104	258	128
	B ..	72	..	285	96	6	387	459	367	877	(a) 28	72	395	949	64
	C ..	..	18	10	..	3	31	..	..	..	..	..	..	..	..
Total ..		152	18	408	124	20	570	691	467	1,119	32	88	499	1,207	192
Salem, East.	A ..	326	..	572	185	20	777	1,103	474	1,294	16 (a)+ 7	103	497	1,397	606
	B ..	274	..	407	89	6	502	776	535	1,200	(a) 27	64	562	1,264	214
	C ..	..	15	4	..	..	19	..	..	..	..	..	..	..	..
Total ..		600	15	983	274	26	1,298	1,879	1,009	2,494	50	167	1,059	2,661	820
lem, North.	A ..	20	1	20	3	5	29	49	40	150	2	4	42	154	7
	B ..	30	..	168	43	5	216	246	167	368	(a) 19	69	186	437	60
	C ..	.	43	..	..	..	43	..	..	..	..	..	..	..	..
Total ..		50	44	188	46	10	288	295	207	518	21	73	228	591	67
Salem, Central.	A ..	333	..	189	24	1	214	547	446	904	5 (a)+ 2	24	453	928	94
	B ..	379	..	703	133	6	842	1,221	660	1,681	(a) 25	60	685	1,741	536
	C ..	..	29	..	..	..	29	..	..	..	..	..	..	..	..
Total ..		712	29	892	157	7	1,085	1,768	1,106	2,585	32	84	1,138	2,669	630
Salem, South.	A ..	458	..	369	80	12	461	919	458	1,2 0	22	62	480	1,582	439
	B ..	478	..	952	211	31	1,194	1,672	1,155	2,414	(a) 21	45	1,176	2,459	496
	C ..	..	11	39	7	3	60	..	..	..	..	..	..	..	..
Total ..		936	11	1,360	298	46	1,715	2,591	1,613	3,934	43	107	1,656	4,041	935
Total, Fourth Circle.	A ..	1,274	3	1,433	370	57	1,863	3,137	1,775	4,687	65	250	1,840	4,937	1,297
	B ..	1,507	..	3,469	847	82	4,398	5,905	3,749	8,527	244	556	3,993	9,083	1,912
	C ..	..	126	73	7	8	214	..	..	..	..	..	..	..	..
Grand Total Fourth Circle.		2,781	129	4,975	1,224	147	6,475	9,042	5,524	13,214	309	806	5,833	14,020	3,209

A = Cases taken to Court. B = Cases compounded. C = Cases undetected.

The difference between column 2 and the closing balance of last year is due to (*i*) transfer of cases from B to A.
(*ii*) readjustment of Forest Divisions.
(*iii*) Exclusion of 95 cases relating to Tanjore.

(*a*) Cases withdrawn.

Register of breaches of Forest Rules during 1920-21—*cont.*

District.		Cases pending from 1919-20.	New cases of the year. Injury to forest by fire.	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.	Total cases.	Disposed of during the year. Convictions. Cases.	Convictions. Persons.	Acquittals. Cases.	Acquittals. Persons.	Total. Cases.	Total. Persons.	Cases pending at close of the year.
Fifth Circle.															
Kollegal.	A	* 52	1	1	10	1	13	65	52	166	7	41	59	207	6
	B	* 27	..	124	55	21	200	227	190	431	22	98	212	529	15
	C	..	25	..	..	..	25	..	..	..	..	..	..	..	..
	Total	79	26	125	65	22	238	292	242	597	29	139	271	736	21
Coimbatore, North.	A	* 28	..	22	14	2	38	66	45	383	1	7	46	390	20
	B	* 46	..	238	69	14	321	367	331	645	24	52	355	697	12
	C	..	31	..	20	..	51	..	..	..	..	..	..	..	..
	Total	74	31	260	103	16	410	433	376	1,028	25	59	401	1,087	32
Coimbatore, South.	A	* 22	..	29	8	11	48	70	54	203	1	9	55	212	15
	B	* 45	..	124	13	42	179	226	169	408	17	45	186	453	40
		(a) + 2													
	C	..	7	..	..	..	7	..	..	..	..	..	..	..	..
	Total	69	7	153	21	53	234	296	223	611	18	54	241	665	55
Madura	A	* 514	1	463	123	21	608	1,122	377	1,630	6	50	383	1,680	739
	B	* 55	..	137	92	16	245	300	170	456	28	80	198	536	102
	C	..	99	..	..	..	99	..	..	..	..	..	..	..	..
	Total	(b) 569	100	600	215	37	952	1,422	547	2,086	34	130	581	2,216	841
Tinnevelly.	A	29	1	123	36	18	178	207	165	599	7	13	172	612	35
	B	187	1	436	163	43	643	830	641	1,498	20	46	661	1,544	169
	C	..	22	7	1	..	30	..	..	..	..	..	..	..	..
	Total	216	24	566	200	61	851	1,037	806	2,097	27	59	833	2,156	204
Total, Fifth Circle.	A	645	3	638	191	53	885	1,530	693	2,981	22	120	715	3,101	815
	B	362	1	1,059	392	136	1,588	1,950	1,501	3,438	111	321	1,612	3,759	338
	C	..	184	7	21	..	212	..	..	..	..	..	..	..	..
Grand Total, Fifth Circle.		1,007	188	1,704	604	189	2,685	3,480	2,194	6,419	133	441	2,327	6,860	1,153
Sixth Circle.															
Mangalore, North.	A	† 35	8	40	5	6	59	94	51	70	15	29	66	99	28
	B	† 40	10	219	63	3	295	335	240	494	47	73	287	567	48
	C	..	9	..	..	..	9	..	..	..	..	..	..	..	..
	Total	75	27	259	68	9	363	429	291	564	62	102	353	666	76
Mangalore, South.	A	† 69	1	51	26	9	87	156	97	203	30	70	127	273	29
	B	† 71	9	209	95	45	358	429	322	460	70	168	392	628	37
	C	..	50	1	..	..	51	..	..	..	..	..	..	..	..
	Total	140	60	261	121	54	496	585	419	663	100	238	519	901	66
Malabar, North.	A	1	..	..	..	1	1	2	2	6	..	..	2	6	..
	B	..	..	7	..	27	34	34	32	36	..	..	32	36	2
	C	..	2	..	..	..	2	..	..	..	..	..	..	..	..
	Total	1	2	7	..	28	37	36	34	42	..	..	34	42	2
Malabar, South.	A	9	..	..	..	8	8	17	14	32	2	5	16	37	1
	B	18	..	3	..	21	24	42	36	115	6	6	42	121	..
	C	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	27	..	3	..	29	32	59	50	147	8	11	58	158	1
The Nilgiris.	A	† 16	1	18	25	10	54	70	64	177	5	7	66	184	4
	B	† 37	..	76	64	18	158	195	152	385	21	36	173	421	22
	C	..	33	..	..	..	33	..	..	..	..	..	..	..	..
	Total	53	34	94	89	28	245	265	213	562	26	43	239	605	26
Central Coimbatore.	A	† 29	..	46	35	6	87	116	93	221	2	3	95	224	21
	B	† 61	2	278	103	14	397	458	330	765	99	157	429	922	29
	C	..	12	5	..	..	17	..	..	..	..	..	..	..	..
	Total	90	14	329	138	20	501	574	423	986	101	160	524	1,146	50
Total, Sixth Circle.	A	159	10	155	91	40	296	455	318	709	54	114	372	823	83
	B	227	21	792	325	128	1,266	1,493	1,112	2,255	243	440	1,355	2,695	138
	C	..	106	6	..	..	112	..	..	..	..	..	..	..	..
Grand Total, Sixth Circle.		386	137	953	416	168	1,674	1,948	1,430	2,964	297	554	1,727	3,518	221
Total, Presidency.	A	3,349	26	4,288	1,873	333	6,520	9,869	5,519	16,435	602	1,900	6,121	18,425	3,748
	B	3,997	29	10,343	4,950	794	16,116	20,113	14,032	32,038	1,329	3,663	15,361	35,701	4,752
	C	21	905	343	46	17	1,311	..	..	..	..	..	..	..	..
Grand Total, Presidency.		7,367	960	14,974	6,869	1,144	23,947	29,982	19,551	48,473	1,931	5,563	21,482	54,126	8,500

A = Cases taken to Court. B = Cases compounded. C = Cases undetected.

* The variations between the closing balances of last year and these figures are due to transfers from B to A.

† The variations between the closing balance of last year and these figures are due to transfers between heads A and B.

(a) Cases in which District Forest Officer had not passed orders last year.

(b) Particulars of offences in unreserved lands have not been furnished.

Annual Form No. 72.

Forest Department, Madras Presidency.

Area of forest tracts protected from fire during 1920–21.

District.	Forest tracts.	Area protected during the previous year.	During the year under report.			Cost during the year under report.
			Area attempted to be protected.	Fires.	Actually protected.	
	First Circle.	Acs.	Acs.	Acs.	Acs.	Rs.
Ganjam ..	Special protection ..	45,772	46,839	1,675	45,164	2,883
	General do. ..	219,709	220,039	41,607	178,432	2,009
	Total, Ganjam ..	265,481	266,878	43,282	223,596	4,892
Vizagapatam.	Special protection ..	54,833	56,213	142	56,071	443
	General do. ..	112,881	112,653	1,041	111,612	105
	Total, Vizagapatam ..	167,714	168,866	1,183	167,683	548
Godavari Upper.	Special protection ..	516,659	532,269	81,176	451,093	10,156
Godavari, Lower.	Special protection ..	150,680	152,636	3,212	149,424	3,421
	General do. ..	81,710	82,568	244	82,324	777
	Total, Godavari, Lower ..	232,390	235,204	3,456	231,748	4,198
Kistna ..	Special protection ..	11,710	14,220	41	14,179	257
	General do. ..	30,727	32,811	..	32,811	804
	Total, Kistna ..	42,437	47,031	41	46,990	1,061
Total, first Circle.	Special protection ..	779,654	802,177	86,246	715,931	17,160
	General do. ..	445,027	448,071	42,892	405,179	3,695
	Grand total ..	1,224,681	1,250,248	129,138	1,121,110	20,855
	Second Circle.					
Bellary ..	Special protection ..	25,470	71,134	21,071	50,063	1,265
	General do. ..	43,036	215,183	31,014	184,169	..
	Total ..	68,506	286,317	52,085	234,232	1,265
Anantapur ..	Special protection ..	129,442	138,426	13,286	125,140	640
	General do. ..	309,021	339,344	5,797	333,547	..
	Total ..	438,463	477,770	19,083	458,687	640
Guntur ..	Special protection ..	(a)				
	General do. ..	512,175	511,567	142	511,425	..
	Total ..	512,175	511,567	142	511,425	..
Kurnool, East.	Special protection ..	82,288	15,596	..	15,596	90
	Early burning ..	107,892	299,520	1,600	297,920	4,158
	General protection ..	391,568	305,667	1,020	304,647	..
	Total ..	581,748	620,783	2,620	618,163	4,248
Kurnool, South.	Special protection ..	185,842	147,987	10,509	137,478	6,008
	Early burning ..	306,619	215,653	29,525	186,128	2,008
	General protection ..	120,778	123,024	110	122 914	..
	Total ..	306,619	486,664	40,144	446,520	8,016
Kurnool, West.	Special protection ..	35,423	42,888	9,550	33,288	1,349
	Early burning	75,109	321,859	365	321,494	3,504
	General protection ..	9,168	25,717	420	25,297	18
	Total ..	119,700	390,414	10,335	380,079	4,871
Total ..	Special protection ..	458,465	415,981	54,416	361,565	9,352
	Early burning	489,620	837,032	31,490	805,042	9,670
	General protection ..	1,385,746	1,520,502	38,503	1,481,999	18
	Grand total ..	2,333,831	2,773,515	124,409	2,649,106	19,040
	Third Circle.					
Cuddapah, North.	Special protection ..	170,234	275,000	10,773	264,227	5,916
	General do. ..	48,708	55,090	154	54,936	..
	Total ..	218,942	330,090	10,927	319,163	5,916
Cuddapah, South.	Special protection ..	170,619	218,072	17,143	200,929	3,710
	General do. ..	38,747	45,231	8	45,223	..
	Total ..	209,366	263,303	17,151	246,152	3,710

(a) This was omitted to be shown in the return for 1919–20.

Area of forest tracts protected from fire during 1920-21—*cont.*

District.	Forest tracts.	Area protected during the previous year.	During the year under report.			Cost during the year under report.
			Area attempted to be protected.	Fires.	Actually protected.	
	Third Circle—cont.	ACS.	ACS.	ACS.	ACS.	RS.
Cuddapah, West.	Special protection ..	198,109	211,495	5,916	205,579	3,521
	General do. ..	103,379	269,284	9,939	259,345	62
	Total ..	301,488	480,779	15,855	464,924	3,583
Nellore ..	Special protection ..	146,297	149,184	..	149,184	1,249
	General do. ..	..	..	..	..	..
	Total ..	146,297	149,184	..	149,184	1,249
Chingleput..	Special protection ..	25,433	25,523	..	25,523	1,436
	General do. ..	106,690	104,553	..	104,555	..
	Total ..	132,123	130,076	..	130,076	1,436
Chittoor ..	Special protection ..	105,392	120,693	6,032	114,661	2,894
	General do. ..	409,663	407,621	3,884	403,737	..
	Total ..	515,055	528,314	9,916	518,398	2,894
Vellore, North.	Special protection ..	38,290	31,088	1,169	29,919	487
	General do. ..	243,448	262,197	565	261,632	..
	Total ..	281,738	293,285	1,734	291,551	487
Total ..	Special protection ..	854,374	1,031,055	41,038	990,022	19,213
	General do. ..	950,635	1,143,976	14,550	1,129,426	62
	Grand total ..	1,805,009	2,175,031	55,583	2,119,448	19,275
	Fourth Circle.					
Vellore, South.	Special protection ..	100,606	100,998	1,955	99,043	491
	General do. ..	190,917	193,280	1,418	191,862	..
	Total ..	291,523	294,278	3,373	290,905	491
Vellore, West.	Special protection ..	94,796	103,762	971	102,791	602
	General do. ..	141,001	140,872	2,639	138,233	..
	Total ..	235,797	244,634	3,610	241,024	602
Salem, East..	Special protection ..	190,033	190,332	315	190,017	983
	General do. ..	172,103	173,096	1,040	172,006	(*a*)+ 196
	Total ..	362,136	363,428	1,355	362,073	1,17
Salem, North.	Special protection ..	75,304	74,850	533	74,317	1,493
	General do. ..	258,489	258,943	1,175	257,768	..
	Total ..	333,793	333,793	1,708	332,085	1,493
Salem, Central.	Special protection ..	106,506	107,026	2,227	104,799	941
	General do. ..	147,170	147,919	503	147,416	(*a*)+ 225
	Total ..	253,676	254,945	2,730	252,215	1,166
Salem, South.	Special protection ..	127,875	127,875	784	127,091	668
	General do. ..	100,814	100,814	...	100,814	..
	Total ..	228,689	228,689	784	227,905	668
Total ..	Special protection ..	695,120	704,843	6,785	698,058	5,599
	General do. ..	1,010,494	1,014,924	6,775	1,008,149	..
	Grand total ..	1,705,614	1,719,767	13,560	1,706,207	5,599
	Fifth Circle.					
Kollegal ..	Special protection ..	38,380	38,380	305	38,075	3,178
	General do. ..	407,478	425,613	12,273	413,340	..
	Total ..	445,858	463,993	12,578	451,415	3,178

REMARKS.—The period excludes the most dangerous part of the fire season owing to change in the "year" under report.

(*a*) Expenditure incurred for clearing top lines.
(*b*) Deductions to tally with the audited figure of Accountant-General.

Area of forest tracts protected from fire during 1920–21—*cont.*

District.	Forest tracts.	Area protected during the previous year.	During the year under report.			Cost during the year under report.
			Area attempted to be protected.	Fires.	Actually protected.	
	Fifth Circle—cont.	ACS.	ACS.	ACS.	ACS.	RS.
Coimbatore, North.	Special protection ..	10,271	11,581	174	11,407	983
	General do. ..	562,418	575,081	9,907	555,174	2,419
	Total ..	572,689	586,662	10,081	576,581	3,402
Coimbatore, South.	Special protection ..	47,233	47,350	910	46,440	1,309
	General do. ..	187,787	200,993	1,432	199,561	..
	Total ..	235,020	248,343	2,342	246,001	1,309
Madura ..	Special protection ..	162,868	175,930	10,291	165,639	5,170
	General do. ..	246,996	246,423	4,323	242,100	(a) —33 ..
	Total ..	409,864	422,353	14,614	407,739	5,137
Tinnevelly ..	Special protection ..	33,979	35,688	3,052	32,636	4,389
	General do. ..	204,167	206,712	2,779	203,933	(a)+ 30 ..
	Total ..	238,146	242,400	5,831	236,569	4,419
Total ..	Special protection ..	292,731	308,929	14,732	294,197	15,026
	General do. ..	1,608,846	1,654,822	30,714	1,624,108	2,419
	Total ..	1,901,577	1,963,751	45,446	1,918,305	17,445
	Sixth Circle.					
Mangalore, North.	Special protection ..	31,695	33,496	285	33,211	751 * 383
	General do. ..	198,953	198,533	955	197,608	447 † — 5
	Total ..	230,648	232,059	1,240	230,819	1,576
Mangalore, South.	Special protection ..	103,938	107,342	2,792	104,550	1,400 * 104
	General do. ..	170,523	171,458	1,956	169,502	838
	Total ..	274,461	278,800	4,748	274,052	2,342
Malabar, North.	Special protection ..	138,622	139,596	30,050	109,546	5,834
Malabar, South.	Special protection ..	104,027	105,076	21	105,055	3,753
The Nilgiris.	Special protection ..	74,154	76,657	31,543	45,114	5,274
Coimbatore, Central.	Special protection ..	114,203	102,103	942	101,161	3,512
	General do. ..	116,527	129,666	426	129,240	1,155
	Total ..	230,730	231,769	1,368	230,401	4,667
Total ..	Special protection ..	566,639	564,270	65,633	498,637	21,011
	General do. ..	486,003	499,687	3,337	496,350	2,435
	Grand total ..	1,052,642	1,063,957	68,970	994,987	23,446
Total, Presidency.	Special protection ..	3,646,983	3,827,265	268,845	3,558,410	87,361
	General do. ..	5,886,751	6,281,982	136,771	6,145,211	8,629
	Early burning ..	489,620	837,032	31,490	805,542	9,670
	Grand total, presidency ..	10,023,354	10,946,269	437,106	10,509,163	105,660

(a) Added or subtracted to tally with Accountant-General's audited figures.
* Cost of fire-tracing Mysore-South Kanara boundary.
† Cash recovery of service payments.

Annual Form No. 73.

Forest Department, Madras Presidency.

Area closed and open to grazing during 1920–21.

District.	Closed to all animals.		Open to grazing			
			Of all animals (except goats).		Of all animals except browsers (sheep and goats).	
	Whole year.	Part of year.	Whole year.	Part of year.	Whole year.	Part of year.
First Circle.						
Reserved forests.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Ganjam	86	..	539	..	..	..
Vizagapatam	18	..	281	..	9	..
Godavari, Upper	..	..	585	..	..	..
Do. Lower	21	..	378	..	..	..
Kistna	52	8	204	..	..	..
Total	177	8	1,987	..	9	..
Reserved lands.						
Vizagapatam	..	..	2*	..	..	..
Godavari, Upper	..	..	247	..	..	..
Do. Lower	..	..	87	..	..	..
Kistna	..	..	1	..	..	..
Total	..	..	337	..	..	..
Second Circle.						
Reserved forests.						
Bellary	45	..	..	..	527	..
Anantapur	86	1	659	1	..	..
Guntur	110	..	..	399	..	290
Kurnool, East	123	189	658	..	..	..
Do. South	551	..	209	..	..	..
Do. West	166	..	689	..	..	..
Total	1,081	190	2,215	400	527	290
Reserved lands.						
Bellary	3	..	..	..	..	..
Total	3	..	..	..	..	..
Third Circle.						
Reserved forests.						
Cuddapah, North	75	..	521	..	..	..
Do. South	92	..	370	..	..	..
Do. West	64	..	687	..	..	..
Nellore	222	458	35	..	..	..
Chingleput	83	..	14	106	..	..
Chittoor	162	123	540	..	..	..
Vellore, North	127	8	323	..	..	..
Total	825	589	2,493	106	..	..
Reserved lands.						
Cuddapah, North	..	..	1	..	..	..
Do. West	1	..	..	..	..	..
Nellore	11	..	..	..	..	..
Total	12	..	1	..	..	..

* Leased forests.

Area closed and open to grazing during 1920-21—*cont.*

District.	Closed to all animals.		Open to grazing			
			Of all animals (except goats).		Of all animals except browsers (sheep and goats).	
	Whole year.	Part of year.	Whole year.	Part of year.	Whole year.	Part of year.
FOURTH CIRCLE.						
Reserved forests.	SQ. MLS.	SQ. MLS.	SQ. MLS.		SQ. MLS.	SQ. MLS.
Vellore, South	77	..	404	..	..	..
Do. West	15	..	368	..	..	..
Salem, East	108	..	467	..	..	..
Do. North	49	..	472	..	..	..
Do. Central	37 +(a) 6	..	369 ..	..	..	..
Do. South	48	(b) ..	291	..	..	..
Total	340	..	2,371	..	..	..
Reserved lands.						
Vellore, South	..	..	1	..	..	..
Do. West	(b) ..	..	..	..	..	..
Salem, East	(b) ..	..	12	..	..	..
Do. North	..	..	(b) ..	..	..	..
Do. Central	6	..	6	..	..	..
Do. South	..	..	19	..	..	..
Total	6	..	38	..	..	..
FIFTH CIRCLE.						
Reserved forests.						
Kollegal	82	..	649	..	..	..
Coimbatore, North	40	..	877	..	..	..
Do. South	250	..	190	..	14	..
Madura	101	..	559	..	..	..
Tinnevelly	301	28	93	..	1	2
Total	774	28	2,368	..	15	2
Reserved lands.						
Tinnevelly	2	..	..	..	..	..
Total	776	28	2,368	..	15	2
SIXTH CIRCLE.						
Reserved forests.						
Mangalore, North	10	..	..	..	349	..
Do. South	8	..	..	..	431	..
Malabar, North	57	..	..	..	206	..
Do. South	144	..	..	..	..	..
The Nilgiris	23	..	389	..	..	..
Coimbatore, Central	136	7	269	..	..	..
Total	378	7	658	..	986	..
Reserved lands.						
Malabar, South	20	..	..	..	..	..
The Nilgiris	9	..	73	..	..	..
Total	29	..	73	..	..	..
Grand Total, Presidency	3,627	822	12,541	506	1,537	292

(a) Represents area leased out for cultivation. (b) Below one square mile.

ANNUAL

Forest Department,

Return of grazing in the

Districts.	Grazing on payment: At enhanced or special rates.					Grazing on payment: At full rates.				
	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Fees received.	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Fees received.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
First Circle.					Rs.					Rs.
Reserved forests.										
Ganjam	..	..	..	..	..	7,920	34,763	S 146	..	9,502
Vizagapatam ..	..	(a) 879	..	..	440	899	13,389	S 521	..	2,896
	(b) 31	(b) 554	(b) S 394	..	203	..	..	..	..	..
Godavari, Upper ..	..	..	..	..	..	..	..	..	..	..
Do. Lower.	(c) 1,470	(c) 706	..	..	1,368	.	..	..	..	* 37
	(b) 6,302	(b) 4,186	..	..	4,197	..	..	..	..	..
	(c) 319	(c) 5,135	(c) S 2,250	..	4,140	5,064	16,780	S 12,379	..	6,206
Kistna	..	(d) 1,553	..	..	..	..	..	..	..	† 1,100
	..	..	..	..	..	..	..	..	..	‡ 156
	..	..	..	..	..	..	..	..	..	* 541
Total ..	8,122	13,013	S 2,644	..	10,348	13,883	64,932	S 13,046	..	18,604 † 1,100 ‡ 156 * 578
Reserved lands.										
Godavari, Upper ..	..	..	..	..	..	..	..	..	..	..
Do. Lower ..	..	..	..	..	..	..	..	..	..	* 41
Total ..	..	..	..	..	..	..	..	..	..	* 41
Unreserved lands.										
Ganjam	..	..	..	..	..	..	..	..	..	* 60
Godavari, Lower.	(b) 8,329	(b) 5,946	..	..	5,651	..	..	..	..	* 1,413
	..	..	..	..	..	..	..	..	..	..
Kistna	..	..	..	..	..	1,344	345	S 100	..	578
Total ..	8,329	5,946	..	..	5,651	1,344	345	S 100	..	578 * 1,482
Grand Total ..	16,451	18,959	S 2,644	..	15,999	15,227	65,277	S 13,146	..	19,182 † 1,100 ‡ 156 * 2,101
Second Circle.										
Bellary	(a) 422	2,475	1,090	..	3,864	7,146	32,465	60,417	..	14,431
	..	..	..	..	..	..	..	..	Fodder grass.	1,567
	..	..	..	..	..	..	..	..	Panchayat fees.	7,126
Anantapur ..	(b) 2,927	64,229	76,639	..	54,201	..	..	..	Panchayat fees.	937
	..	..	..	..	..	..	..	..	Fodder grass.	2,799
	(c) 3,464	43,234	48,309	..	55,737	(1) 1,415	3,153	23,503	..	4,434
	..	..	..	..	..	..	..	..	Panchayat fees.	(2) 6,693
	..	..	..	..	..	..	..	..	Kancha rent.	1,139
Guntur	..	..	..	..	..	..	..	..	Fodder grass.	5,432
	..	..	..	..	..	..	..	..	Duplicate certificate fees for lost permits.	7
	..	..	..	..	..	..	..	..	Permit fees.	99
Kurnool, East ..	(d) 1,202	15,721	..	..	28,123	(3) 1,582	17,739	15,173	..	13,849
	..	..	..	..	..	..	..	..	Fodder grass.	230
	..	..	..	..	..	..	..	..	Panchayat fees.	2,325
Do West ..	(a) 40	8,900	..	..	8,980	(3) 5,016	26,288	34,883	..	25,627
	(4) 217	1,265	746	..	593	..	..	..	..	(b) 390
Do. South ..	(e) 2,032	16,931	18,787	..	14,686	..	(6) 2,033	342	..	2,204
	(4) 213	203	551	..	221	..	..	..	..	..
Total ..	10,517	1,62,958	1,46,122	..	166,405	15,159	81,678	1,34,518	..	89,284

Notes for First C.— S = Sheep. G = Goats. * Sale-proceeds of fodder grass.

† Revenue from forests handed over to panchayat management. ‡ Sale-proceeds of mangrove leaves.

(1) The full rates are 6 annas per buffalo, 3 annas per cow or bullock and 1 anna 6 pies per sheep.

(2) The enhanced or special rates are :—(a) 8 annas per cow or bullock.
(b) 8 annas per buffalo, 4 annas per cow or bullock and 2 annas per sheep.
(c) 12 annas per buffalo, 6 annas per cow or bullock and 3 annas per sheep.
(d) Re. 1 per plough bull.

(3) The privileged rates are :— (e) 4 annas per buffalo, 2 annas per cow or bullock, 1 anna per sheep.
(f) 1 anna per buffalo, cow or bullock.

FORM No. 74.

Madras Presidency.

State forests during 1920-21.

Number of animals.						Grazing free. Number of animals.										Grand total of value at full rates.
At privileged rates.						By right under settlement.					During pleasure of Government or otherwise than under settlement.					
				Fees received.												
Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Actual.	Value at full rates.	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Value of fees at full rates.	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Value of fees at full rates.	Total value of fees at full rates.	
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
				Rs.	Rs.					Rs.					Rs.	Rs.	Rs.
..	..	..	..	..	..	834	1,491	..	..	592	541	3,041	S 150	..	787	1,379	10,881
..	..	..	..	..	..	..	..	..	..	..	..	5,160	..	..	968	968	4,507
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
(e) 4,347	(e) 26,723	(e) S 5,423	..	4,766	7,149	..	..	..	..	..	3,954	37,328	S 106	..	8,492	8,492	15,641
(e) 669	(e) 6,972	..	..	1,833	4,078	..	..	..	..	..	988	9,372	..	..	2,128	2,128	11,771
(f) 717	(f) 12,005	..	..														* 37
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10,346
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	† 1,100
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	‡ 156
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	* 541
5,733	45,700	S 5,428	..	6,599	11,227	834	1,491	..	..	592	5,483	54,901	S 256	..	12,375	12,967	53,146
																	† 1,100
																	‡ 156
																	* 578
(e) 1,687	(e) 10,364	(e) S 35	..	1,719	2,579	..	..	..	..	..	..	..	..	..	..	..	2,579
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	* 41
1,687	10,364	S 35	..	1,719	2,579	..	..	..	..	..	..	..	..	..	..	..	2,579
																	* 41
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	* 69
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,651
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	* 1,413
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	578
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,229
																	* 1,482
7,420	56,064	S 5,458	..	8,318	13,806	834	1,491	..	..	592	5,483	54,901	S 256	..	12,375	12,967	61,954
																	† 1,100
																	‡ 156
																	* 2,101
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	26,988
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	57,937
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	73,541
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	S 102	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	647	716	G 5,211	..	4,666	..	..	..	..	..	..	49,193
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	261	202	330	..	379	..	..	..	..	..	..	35,969
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	12	11	57	..	22	..	..	..	..	..	..	17,133
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	920	929	489	..	5,067	..	..	..	..	..	..	2,60,761
								G 5,211									

Notes for Second Circle—(1) Full rates As. 8 per buffalo, As 4 per cow and As. 2 per sheep.
(2) This includes an amount of Rs. 1,437 collected in 1919-20.
(3) Full rates As. 12 per buffalo, As. 8 per cow and As. 4 per sheep.
(4) Difference of fees collected between the enhanced rate for permits issued in 1919-20 at old rates.
(5) Collection from Panchayatdars.
(6) Sugali cattle Re. 1 per cow and As. 8 per sheep.

The enhanced rates are :—(*a*) Rs. 2 per buffalo, Re. 1 per cow and As. 8 per sheep.
(*b*) Re. 1 per buffalo, As. 8 per cow and As. 4 per sheep.
(*c*) Rs. 1-8-0 per buffalo, As. 12 per cow and As. 6 per sheep.
(*d*) Rs. 2 per buffalo and Re. 1 per cow.
(*e*) As. 12 per buffalo, As. 8 per cow and As. 4 per sheep.

NOTE.—According to this statement the number of animals licensed to graze on payment are 25,676 buffaloes ; 244,636 cows and bullocks and 280,444 sheep. Those figures do not agree with the figures given in the abstract printed at p. XXIX of the appendices.

Return of grazing in the

District.	Grazing on payment.									
	At enhanced or special rates.					At full rates.				
	Buffaloes.	Cows and bullocks.	Sheep.	Other animals.	Fees received.	Buffaloes.	Cows and bullocks.	Sheep.	Other animals.	Fees received.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
THIRD CIRCLE.					Rs.					Rs.
Cuddapah, North ..	..	(a) 8,326	..	..	8,326	5,011	12,977	50,787	..	9,074 (b) 32 (c) 257
Do. South ..	..	(a) 2,247	..	..	2,247	484	17,677	14,130	..	4,821 (b) 10
Do. West ..	(a) 3	(a) 7,325 (d) 299	..	..	7,443	2,762	26,498	70,855	..	12,647 (b) 12 (e) 1,288
Nellore	(b) 21	(a) 918	(a) 88	..	993	..	..	..	..	(e) 1,268 (g) 72,203
Chingleput	..	..	..	..	..	..	..	..	..	(e) 1,801 (g) 23,920
Chittoor	(h) 1,278	(h) 64,065	(a) 23,958	..	39,300	..	..	10	..	1 (e) 150 (i) 270
Vellore North	(h) 493	(h) 32,468	(h) 24,531	..	22,860	80	912	..	..	201 (e) 3,382
Total ..	1,795	115,648	48,577	..	81,169	8,337	58,064	135,782	..	131,337
FOURTH CIRCLE.										
Vellore, South ..	(a) 40 (b) 182 (c) 77 (d) ..	1,545 19,430 5,393 2,346	3,184 6,887 3,998 ..	..	1,206 11,619 5,660 2,346	89 3,528	7,950 16,877	5,432 1,249	..	2,038 4,695 (e) 2,650 ..
Do. West ..	(a) .. (b) 272 (f) 2 (d) .. (g) ..	596 20,660 5,136 9,467 2,296	1,598 541 2,412	..	523 10,737 3,022 9,467 574	1,638	10,174	5,141	..	3,004
Salem, East	(h) 231 (c) 113	31,345 6,194	2,741 3,755	..	18,662 6,223	13	1,550	..	..	296 (i) 1,500 (j) 393 (k) 6,386 (e) 3,628
Do. North	(l) 574	31,455	335	..	16,242	..	..	..	..	..
Do. Central ..	(j) 189 (h) 3	32,164 13,498	15,288 2,944	..	19,085 8,424	..	..	..	..	(m) 47
Do. South	(a) 3 (h) 21	487 12,174	1,617 21,762	..	488 12,992	376	8,500	6,135	..	2,310 (e) 10,290 (n) 4
Deduct value of permits exchanged by Permit Issuing officers.	..	..	..	..	..	..	..	..	..	— 123
Total ..	1,707	194,176	67,062	..	1,27,270	5,644	45,051	17,957	..	37,023

* The rates should be specified at the foot of the statement.

Notes.—(1) The full rates are 6 annas per buffalo ; 3 annas per cow, bullock or other animal and 1½ annas per sheep.
(2) The privileged rates are 1 anna per cow ; 6 pies per sheep in North Cuddapah, 1½ annas per cow in West Cuddapah.

(a) Rupees 2 per buffalo ; 1 rupee per cow, bullock or other animal, 8 annas per sheep.
(b) Penning licence fee.
(c) Value of fodder grass.
(d) Annas 6 per cow.
(e) Panchayat fees.
(f) Rupees 1-8-0 per buffalo.
(g) Kanchа rent.
(h) Rupee 1 per buffalo, 8 annas per cow and 4 annas per sheep.
(i) Royalty on hay.

Rate of enhanced fees are are follows:—
(a) Cow annas 6, buffalo annas 12 and sheep annas 3.
(b) Cow annas 8, buffalo 1 rupee and sheep annas 4.
(c) Cow annas 12, buffalo Rs. 1-8-0 and sheep 6 annas.
(d) Cow 1 rupee.
(e) Panchayat amount.
(f) Cow annas 8buffalo annas 12 and sheep annas 3.
(g) Cow annas 4.
(h) Cow annas 9, buffalo Re. 1-2-0 and sheep As. 4-6.
(i) Grazing assessment of hill villages of Salem district including Chetteri hills and Atur Kalroyans.
(j) Amount realized in Kodiakadu and Talainayar reserved forests.
(k) Grazing lease amount.
(l) Cow annas 8, buffalo annas 12 and sheep annas 4.
(m) Grazing assessment collected for the reserves of Atur Kalroyans of East Salem division collected in Central Salem.
(n) Grazing revenue collected by revenue officials.

State forests during 1920–21—*cont.*

Number of animals.						Grazing free. Number of animals.										
At privileged rates.*						By right under settlement.					During pleasure of Government or otherwise than under settlement.					
Buffaloes. (12)	Cows and bullocks. (13)	Sheep. (14)	Other animals. (15)	Fees received. Actual. (16)	Fees received. Value at full rates. (17)	Buffaloes. (18)	Cows and bullocks. (19)	Sheep. (20)	Other animals. (21)	Value of fees at full rates. (22)	Buffaloes. (23)	Cows and bullocks. (24)	Sheep. (25)	Other animals. (26)	Value of fees at full rates. (27)	Total value of fees at full rates. (28)	Grand total of value at full rates. (29)
				Rs.	Rs.					Rs.					Rs.	Rs.	Rs.
..	300	150	..	23	70	..	..	..	..	..	190	45	850	..	159	159	17,918
..	..	..	..	..	..	..	723	..	..	136	..	..	..		..	..	7,214
..	200	..	..	19	38	..	..	..	..	..	..	..	..	..	..	..	21,428
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	74,466
..	..	..	..	..	..	..	..	..	..	..	..	81	..	..	15	15	25,736
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	39,721
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	26,443
..	500	150	..	..	108	..	723	..	..	136	190	126	850	..	174	174	2,12,924
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	30,119
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	27,327
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	37,688
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16,242
..	..	..	..	..	..	..	..	..	..	..	..	150	..	..	28	28	27,584
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25,961
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
..	..	..	..	..	..	..	..	..	..	..	..	150	..	..	28	28	1,64,321

Return of grazing in the

Grazing on payment.

District.	At enhanced or special rates					At full rates.				
	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals	Fees received.	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Fees received.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
FIFTH CIRCLE.					RS.					RS.
Kollegal	(a) 2,522	(a) 55,450	( ) 2,348	..	30,834	..	..	..	..	..
	..	..	..	..	(e) 13					
Coimbatore, North ..	(a) 4,801	(a) 67,584	(a) 19,196	..	43,392	..	..	..	..	..
	..	..	..	..	(e) 879					
	(a) 136	(a) 5,021	(a) 174	..	2,684					
	(b) 14	(b) 85	..	..	113					
Do. South ..	..	..	..	..	(e) 257	..	..	..	..	..
	..	..	..	..	(f) 335					
	..	..	..	..	(h) + 1					
	(c) 72	(c) 18,055	(c) 11,111	..	16,930					
Madura	(d) 100	(d) 20,801	(d) 4,757	(d) 479	5,964	..	..	..	..	..
	..	..	..	..	(f) 1,394					
	(a) 271	(a) 5,984	(a) 2,511	..	3,891					
	..	..	..	..	(f) 575					
Tinnevelly	..	..	..	..	(g) 160	116	5,830	13,947	..	2,444
	..	..	..	..	(h)+1,013					
Total ..	7,910	1,72,980	40,097	479	1,08,435	116	5,830	13,947	..	2,444
SIXTH CIRCLE.										
Reserved forests.										
Mangalore, North ..	(a-1) 1,506	13,018	..	..	5,823	..	..	..	..	..
Do. South ..	(a-1) 2,546	17,145	..	..	8,021	..	..	..	..	..
Malabar, North	(b-1) 2,832	4,509	..	..	4,587	..	..	..	..	..
	..	(b-1) 521	..	..	260	11,905	17,778	S 1,840	..	7,978
The Nilgiris	..	..	..	..	..	(d-1) 16	(d-1) 47	..	..	(e-1) 111
	..	(g-1) 2,398	S 927	..	2,861					(e-1) 2,791
Central Coimbatore ..	(b-1) 166	6,757	S 2,459	..	4,158	..	..	..	..	(e-1) 902
	(h-1) 30	6,324	S 1,900	..	1,834					..
Total ..	6,580	50,672	5,286	..	27,544	11,921	17,825	1,840	..	11,782
Reserved lands.										
The Nilgiris	..	(b-1) 620	..	..	310	448	708	..	..	301
	..	..	..	..	..	(d-1) 3	4			
Total, VI Circle ..	6,580	51,292	5,283	..	27,854	12,372	18,537	1,840	..	12,083
Grand total, Presidency ..	44,960	7,16,013	3,09,788	479	5,27,132	56,855	2,74,437	3,16,990	..	2,94,720

Full rates :—As. 6 per buffalo, As. 3 per cow or bullock and As. 1-6 per sheep in Tinnevelly and As. 4 per cow limit in Madura.
(a) Re. 1 per buffalo, As. 8 per cow or bullock and As. 4 per sheep.
(b) Rs. 2 per buffalo and Re. 1 per cow or bullock.
(c) Rs. 1-4-0 per buffalo, As. 10 per cow or bullock and As. 8 per sheep.
(d) As. 8 per buffalo, As. 4 per cow or bullock or other animals and As. 2 per sheep.
(e) Sale-proceeds of fodder grass.
(f) Revenue from reserves handed over to panchayat management.
(g) Revenue by lease of the right to graze in Kanaikuttiparamba reserved forest.
(h) Added to tally with Accountant-General's audited figures.

Full rates.—Buffaloes As. 6 each, cows and bullocks As. 3 each and sheep As 1-6 each.
(a-1) As. 10 per buffalo and As. 6 per cow.
(b-1) Re. 1 per buffalo, As. 8 per cow and As. 4 per sheep.
(c-1) Revenue from forests handed over to panchayat management.
(d-1) Calves half rates.
(e-1) Fodder grass.
(f-1) 3,525 cows for 2 days at As 6 per 100 per diem, Rs. 26 and 14,000 sheep for 2 days at As. 3 per diem, Rs. 52.
(g-1) Rs. 2 per buffalo, Re. 1 per cow and As. 8 per sheep.
(h-1) As. 8 per buffalo, As. 4 per cow and As. 2 per sheep.
(k-1) Elephant.

State forests during 1920-21—*cont.*

Number of animals.						Grazing free, Number of animals.										
At privileged rates.						By right under settlement.					During pleasure of Government or otherwise than under settlement.					
				Fees received.												
Buffaloes. (12)	Cows and bullocks. (13)	Goats and sheep. (14)	Other animals. (15)	Actual. (16)	Value at full rates. (17)	Buffaloes. (18)	Cows and bullocks. (19)	Goats and sheep. (20)	Other animals. (21)	Value of fees at full rates (22)	Buffaloes. (23)	Cows and bullocks. (24)	Goats and sheep. (25)	Other animals. (26)	Value of fees at full rates. (27)	Total value of fees at full rates. (28)	Grand total of value at full rates. (29)
				Rs.	Rs.					Rs.					Rs.	Rs	Rs.
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	30,847
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	44,271
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3,390
..	..	..	..	..	..	..	..	..	..	..	245	2,901	315	28	894	..	25,182
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,083
..	..	..	..	..	..	..	..	..	..	..	245	2,901	315	28	894	..	1,11,773
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,823
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,021
..	..	..	..	..	..	..	..	..	..	..	..	..	..	(*k*-l)1	67	67	4,654
..	3,525	S 14,000	..	(*j*-1)78	1,973	..	..	..	..	..	80	..	..	..	30	30	10,352
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12,546
..	3,525	14,000	..	78	1,973	..	..	..	..	..	80	..	..	1	97	97	41,396
..	..	..	..	..	..	..	..	..	..	..	1,716	..	..	..	643	643	1,254
..	3,525	14,000	..	78	1,973	..	..	..	..	..	1,796	..	..	1	740	740	42,650
7,420	60,089	19,608	..	8,396	15,887	1754	3,143	5,700	..	5,795	7,714	58,078	1,421	29	14,211	13,909	8,57,745

Abstract of animals permitted to grazing on payment in reserved forests and reserved lands in the Presidency.

Circle.	Buffaloes.	Bullocks and cows.	Sheep.	Other Animals.	Total.
First Circle	39,098	140,300	21,248	..	200,646
Second ,, ...	30,421	335,051	386,724	..	762,196
Third ,, ...	10,132	174,212	184,509	..	368,853
Fourth ,, ...	7,351	239,227	85,019	..	331,597
Fifth ,, ...	8,026	178,810	54,044	479	241,359
Sixth ,, ...	18,952	73,354	21,126	..	113,432
Grand total ..	113,980	1,150,954	752,670	479	2,018,083

Annual Form No. 75.

Forest Department, Madras Presidency.

Area under artificial reproduction, 1920–21.

District.	Area in acres.				Expenditure during the year.		Total expenditure from commencement.		Revenue during the year.	Total revenue from date of creation of plantation.
	On 1st July 1920.	Added during the year.	Excluded during the year.	Area on 31st March 1921.	Creation.	Upkeep.	Creation.	Upkeep.		
First Circle.										
A.—Regular Plantations.	ACS.	ACS.	ACS.	ACS.	RS.	RS.	RS.	RS.	RS.	RS.
Vizagapatam ..	51	..	..	51	..	..	2	42	55	3,707
Gōdāvari, Lower ..	152	..	38	114	..	98	31,150	15,573	3,314	77,832
Kistna	34	5	..	39	98	114	1,735	7,618	84	3,653
Total ..	237	5	38	204	98	212	32,887	23,233	3,453	85,192
B.—Taungya Plantations.										
Ganjām	2	..	..	2	..	..	3	..	..	..
Gōdāvari, Upper ..	..	43	..	43	236	..	236	..	..	..
Total ..	2	43	..	45	236	..	239	..	..	..
C.—Cultural Operations.										
Ganjām	91	20	..	111	75	586	75	694	..	..
Vizagapatam ..	45	6	23	28	37	..	(a) 224	..	..	..
Gōdāvari, Upper ..	109	22	109	22	70	..	(a) 101	..	..	..
Do. Lower ..	2,502	51	..	2,553	131	..	2,806	1,032	..	..
Kistna	1,475	279	1,652	102	147	58	(a) 579	(a) 58	..	(b) 719
Total ..	4,222	378	1,784	2,816	460	644	3,785	1,784	..	719
Grand total ..	4,461	426	1,822	3,065	794	856	36,911	25,017	3,453	85,911
Second Circle.										
A.—Regular Plantations.										
Bellary	579	..	..	579	..	..	9,423	63,086	..	6,574
Guntūr	648	..	(c) 79	569	..	..	(d)18,221	(d)13,781	(c) 1,343	(d) 18,332
Kurnool, East ..	130	..	..	130	..	..	38,471	26,045	..	..
Do. West ..	1,430	..	..	1,430	..	1,490	2,92,254	66,672	705	18,603
Total ..	2,787	..	79	2,708	..	1,490	3,58,369	1,69,584	2,048	43,509
B.—Taungya Plantations—Nil.										
C.—Cultural Operations.										
Bellary	6,790	..	..	6,790	..	..	27,981	3,066	..	..
Anantapur	148	(e) 50	(e) 58	140	52	80	343	80	..	..
Guntūr	..	..	..	..	48	..	1,844	6	..	..
Kurnool, East ..	437	99	..	536	386	..	10,945	3,561	..	..
Do. South ..	527	..	..	527	146	..	5,300	1,765	..	..
Do. West ..	5,090	212	..	5,302	..	446	23,475	3,142	..	..
Total ..	12,992	361	58	13,295	632	526	69,888	11,560	..	..
Grand total ..	15,779	361	137	16,003	632	2,016	4,28,257	1,81,144	2,048	43,509
Third Circle.										
A.—Regular Plantations.										
Cuddapah, North ..	10	..	..	10	..	..	560	..	..	..
Do. South ..	38	..	..	38	..	3,810	23	3,997	1,705	5,138
Do. West ..	..	..	..	..	..	..	..	..	..	..
Nellore	1,730	..	(f) 50	1,680	4	25	1,56,709	17,254	12,379	2,84,745
Chingleput	..	..	..	..	..	..	..	..	..	..
Chittoor	61	..	..	61	..	367	..	2,038	..	51
Vellore, North ..	310	15	.	325	842	1,061	24,287	1,40,351	1,347	92,162
Total ..	2,149	15	50	2,114	846	4,763	1,81,579	1,63,640	15,431	3,82,096

(a) Excludes expenditure on areas abandoned.
(b) Revised figures furnished by the District Forest Officer.
(c) Casuarina plantation filled over during the year.
(d) Revised figures (due to wrong totals adopted in 1919–20).
(e) Dibbling of sandal seeds.
(f) Sold.

Area under artificial reproduction, 1920-21—*cont.*

District.	Area in acres.				Expenditure during the year.		Total expenditure from commencement.		Revenue during the year.	Total revenue from date of creation of plantation.
	On 1st July 1920.	Added during the year.	Excluded during the year.	Area on 31st March 1921.	Creation.	Upkeep.	Creation.	Upkeep.		
	ACS.	ACS.	ACS.	ACS.	RS.	RS.	RS.	RS.	RS.	RS.
THIRD CIRCLE—*cont.*										
***B.—Taungya Plantations*—Nil.**										
C.—Cultural Operations.										
Cuddapah, North ..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	51	..	51	136	..	136	..	..	..
Do. West ..	..	..	..	..	..	..	..	..	..	..
Nellore	527	..	110	417	..	..	2,767	..	..	..
Chingleput	..	..	..	..	..	..	..	..	..	..
Chittoor	3,484	1,071	16	4,539	1,604	363	2,820	1,178	..	..
Vellore, North ..	1,537	..	..	1,537	..	..	939	154	..	579
Total ..	5,548	1,122	126	6,544	1,740	363	6,662	1,332	..	579
Grand total ..	7,697	1,137	176	8,658	2,586	5,126	1,88,241	1,64,972	15,431	3,82,675
FOURTH CIRCLE.										
A.—Regular Plantations.										
Vellore, South ..	72	20	..	92	385	125	2,924	693	786	5,640
B.—Taungya Plantations.										
Vellore, South ..	6	2	..	8	..	..	50	..	..	..
C.—Cultural Operations.										
Vellore, South ..	19,925	3,202	..	23,127	72	..	1,213	..	..	..
Do. West ..	991	150	..	1,141	12	..	137	..	..	..
Salem, East ..	13,037	882	..	13,919	130	104	3,182	3,533	..	..
Do. Central ..	1,233	330	..	1,563	168	128	9,794	403	..	..
Do. South ..	302	..	..	302	..	..	63	..	..	..
Total ..	35,488	4,564	..	40,052	382	232	14,389	3,936	..	..
Grand total ..	35,566	4,586	..	40,152	767	357	17,363	4,629	786	5,640
FIFTH CIRCLE.										
A. Regular Plantations.										
Coimbatore, South ..	* 64	28	11	81	243	387	* 1,369	* 775	..	..
Madura ..	1,329 / (a) —3	120	..	1,446	1,947	267	64,548	8,703	212	9,524
Tinnevelly	5,358	4	..	5,362	27	446	7,920	3,248	2,491	21,880
Total ..	6,748	152	11	6,889	2,217	1,100	73,837	12,726	2,703	* 31,404
B. Taungya Plantations.										
Tinnevelly	23	..	..	23	..	..	47	138	..	..
C. Cultural Operations.										
Kollegal	352	21	10	363	186	..	1,003	196	..	..
Coimbatore, North ..	828	216	..	1,044	693	71	(b) 2,843	(b) 798	..	..
Do. South ..	* 16	30	..	46	45	48	* 223	* 170	..	..
Tinnevelly	4,381	218	..	4,599	131	306	5,778	6,733	50	155
Total ..	5,577	485	10	6,052	1,055	425	9,847	7,897	50	155
Grand total ..	12,348	637	21	12,964	3,272	1,525	83,731	20,761	2,753	31,559
SIXTH CIRCLE.										
A. Regular Plantations.										
Mangalore, South ..	52	..	..	52	..	..	10,357	..	..	516
Malabar, North ..	379	..	..	379	451	423	15,989	21,026	3,837	14,661
Do. South ..	6,798	83	..	6,881	11,153	6,603	5,75,596	5,73,589	3,32,214	39,00,505
The Nilgiris ..	1,743	..	..	1,743	..	614	6,462	3,14,766	30,585	8,57,915
Total ..	8,972	83	..	9,055	11,604	7,640	6,08,404	9,09,381	3,66,636	47,73,597

NOTE.—The changes in the opening balances are due to readjustment of Divisions.

* Revised figures furnished by the District Forest Officer with the remark that some of the plantations shown in the previous year's return exist only on paper.

(*a*) Due to adoption of the correct area of Vannathiparai teak plantation.

(*b*) Amount pertaining to areas excluded from the plantations in 1919-20 have been deducted.

Area under artificial reproduction, 1920-21—*cont.*

District.	Area in acres.				Expenditure during the year.		Total expenditure from commencement.		Revenue during the year.	Total revenue from date of creation of plantation.
	On 1st July 1920.	Added during the year.	Excluded during the year.	Area on 31st March 1921.	Creation.	Upkeep.	Creation.	Upkeep.		
				SIXTH CIRCLE—*cont.*						
				B. Taungya Plantations.						
	ACS.	ACS.	ACS.	ACS.	RS.	RS.	RS.	RS.	RS.	RS.
Mangalore, South ..	50	7	..	57	36	..	37	..	..	..
Malabar, North ..	635	..	..	635	..	9	..	10,895	..	..
The Nilgiris ..	32	..	..	32	..	262	504	4,433	..	..
Coimbatore, Central.	54	..	..	54	..	129	..	129	..	..
Total ..	771	7	..	778	36	400	541	15,457	..	..
				C. Cultural Operations.						
Mangalore, North ..	586	223	226	583	1,157	14	1,571	14	..	..
Do. South ..	640	429	..	1,069	2,484	..	4,024	..	..	..
Malabar, North ..	4,590	12	..	4,602	149	74	4,804	8,598	..	..
The Nilgiris ..	45	..	..	45	37	..	227	..	..	..
Coimbatore, Central.	399	464	280	583	2,551	17	* 4,074	1,197	..	..
Total ..	6,260	1,128	506	6,882	6,378	105	14,700	9,809	..	..
Grand total ..	16,003	1,218	506	16,715	18,018	8,145	6,23,645	9,34,647	3,66,636	47,73,597
Grand total, Regular Plantations.	20,965	275	178	21,062	15,150	15,380	12,58,000	12,79,257	3,91,057	53,21,438
Tangya Plantation..	802	52	..	854	272	400	877	15,595	..	..
Cultural operations..	70,087	8,038	2,484	75,641	10,647	2,295	1,18,571	36,318	50	1,453
Grand total for the Presidency. †	91,854	8,365	2,662	97,557	26,069	18,025	13,77,448	13,31,170	3,91,107	53,22,891

* Excludes Rs. 2,005 relating to areas abandoned. † Revised figure.

ANNUAL FORM No. 76.

Forest Department, Madras Presidency.

Outturn (in thousands of cubic feet solid) of timber and fuel during the year 1920-21 and agency of exploitation.

ANNUAL.

Forest Department.

Outturn (in thousands of cubic feet solid) of timber and fuel

Division.	Timber in the rough logs.					Timber in the rough poles.					Sawn or square timber.				
	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
						(In thousands of cubic feet.)									FIRST
															I. Reserved
Ganjam	192	74	2	..	268	135	34	..	28	197	..	..	..	4	4
Vizagapatam	1	..	..	..	1	..	1	..	..	1	..	..	..	..	..
Gōdāvari, Upper ..	6	..	..	..	6	3	..	..	..	3	..	..	..	..	..
Do. Lower ..	1	33	..	..	34	..	..	..	..	..	..	..	..	..	..
Kistna	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	200	107	2	..	309	138	35	..	28	201	..	..	..	4	4
															II. Leased
															III. Reserved
															IV. Unreserved
Ganjam	3	19	1	..	23	5	2	..	9	16	..	..	..	..	..
Vizagapatam	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gōdāvari, Upper ..	46	1	..	..	47	2	3	..	..	5	..	..	..	..	..
Do. Lower ..	..	222	41	..	263	1	..	..	..	1	..	17	..	..	17
Kistna	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	49	242	42	..	333	8	5	..	9	22	..	17	..	..	17
Grand total ..	249	349	44	..	642	146	40	..	37	223	..	17	..	4	21
															SECOND
															I. Reserved
Bellary	..	..	3	..	3	..	..	..	..	..	..	..	..	..	..
Anantapur	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..
Guntūr	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kurnool, East	3	..	..	..	3	2	..	..	..	2	7	..	1	..	8
Do. South	2	18	..	..	20	1	35	..	..	36	..	..	..	..	..
Do. West	24	..	1	..	25	4	..	2	1	7	27	..	..	..	27
Total ..	29	18	5	..	52	7	35	2	1	45	34	..	1	..	35
															II. Leased
															III. Reserved
															IV. Unreserved
Bellary	..	..	..	..	..	..	22	8	..	30	..	..	..	..	..
Anantapur	..	87	1	..	88	..	..	..	..	..	..	..	..	..	..
Guntur	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kurnool, East	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	18	2	..	20	..	..	..	..	..	..	..	..	..	..
Do. West ..	..	78	..	..	78	..	..	..	..	..	..	..	..	..	..
Total ..	..	183	3	..	186	..	22	8	..	30	..	..	..	..	..
Grand total ..	29	201	8	..	238	7	57	10	1	75	34	..	1	..	35
															THIRD
															I. Reserved
Cuddapah, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nellore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chingleput	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chittoor	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Vellore, North ..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Total ..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..

Note for the First Circle.

REMARKS.—The figures are actuals except in the following cases :—

(1) *Ganjām*—Unreserved lands—Column 3.—This includes an estimated quantity of 5,511 cubic feet arrived at by conversion of value at 20 cubic feet per rupee realised by the Revenue department.

(2) *Gōdāvari, Lower*—Unreserved lands—Column 3.—This includes 28,000 cubic feet of timber obtained by conversion of sale amount into outturn at one cubic foot for one anna.

(3) *Kistna*—Unreserved lands—Estimate calculated at one cubic foot per anna on the value realised and two annas per cubic foot in case of palmyra trees granted free.

Note for Second Circle.

Bellary—(1) Figures in column 4 under 'Reserved Forests' are estimates calculated at 6 cubic feet per tree (palmyra).

(2) Figure in column 8 under Unreserved Lands is arrived at by converting the money value of timber at 1 cubic foot for As. 4 for I class timber and As. 2 for II class timber in column 9 by converting the money value at 20 cubic feet for Rs. 2-8-0 and column 28 at 20 cubic feet for As. 6.

Anantapur.—Figures shown are estimates money value of timber is converted into cubic feet at Rs. 2-8-0 per 20 cubic feet and for fuel at Re. 1-4-0 for 45 cubic feet.

Guntūr.—Figures in columns 18 and 28 have been estimated by converting the money value of timber and fuel at 1 cubic foot for an anna. The figures in column 27 by adoption of a conversion factor of 100 cubic feet per cart and out of 20 in column 20, 17, has been estimated at 1 cubic foot per anna and the balance 3 is actuals.

Kurnool, South.—Figures shown under "Government" under heading "Reserved Forests" are actuals; whereas the figures shown under 'other items' are estimates, a cart-load=20 cubic feet. Under 'Unreserved lands' figures given are estimate 1 cart-load=20 cubic feet.

FORM No. 76.

Madras Presidency.

during the year 1920–21 and ageney of exploitation.

Miscellaneous.					Total timber.					Fuel.					
Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Total outturn.
(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
CIRCLE.															
Forests.							(*In thousands of cubic feet.*)								
..	..	..	..	..	327	108	2	32	469	198	213	..	89	500	969
..	..	..	..	..	1	1	..	..	2	6	134	..	..	140	142
2	..	..	..	2	11	..	..	..	11	..	..	..	..	..	11
..	..	..	..	..	1	33	..	..	34	15	1,545	..	..	1,560	1,594
..	1	..	..	1	..	1	..	..	1	7	439	..	..	446	447
2	1	..	..	3	340	143	2	32	517	226	2,331	..	89	2,646	3,163
Forests—Nil.															
Lands—Nil.															
Lands.															
..	..	..	..	..	8	21	1	9	39	5	183	..	7	195	234
..	18	..	..	18	..	18	..	..	18	..	12	..	..	12	30
23	14	..	1	38	71	18	..	1	90	13	61	..	..	74	164
..	..	..	..	..	1	239	41	..	281	1	103	..	..	104	385
..	39	17	..	56	..	39	17	..	56	..	43	..	..	43	99
23	71	17	1	112	80	335	59	10	484	19	402	..	7	428	912
25	72	17	1	115	420	478	61	42	1,001	245	2,733	..	96	3,074	4,075
CIRCLE.															
Forests.															
..	..	..	..	..	..	..	3	..	3	4	223	..	..	227	230
..	..	..	..	..	..	..	1	..	1	1	114	..	..	115	116
..	17	..	..	17	..	17	..	..	17	17	230	..	..	247	264
..	..	2	..	2	12	..	3	..	15	59	..	..	..	59	74
2	7	2	..	11	5	60	2	..	67	..	70	..	..	70	137
..	..	..	..	..	55	..	3	1	59	1,308	..	..	154	1,462	1,521
2	24	4	..	30	72	77	12	1	162	1,389	637	..	154	2,180	2,342
Forests—Nil.															
Lands—Nil.															
Lands.															
..	..	..	..	..	..	22	8	..	30	..	96	..	..	96	126
..	..	..	..	..	..	87	1	..	88	..	109	..	..	109	197
..	57	20	..	77	..	57	20	..	77	..	72	..	..	72	149
..	8	19	..	27	..	8	19	..	27	..	3	..	..	3	30
..	..	..	..	..	..	18	2	..	20	..	53	..	..	53	73
..	..	..	..	..	..	78	..	..	78	..	59	..	..	59	137
..	65	39	..	104	..	270	50	..	320	..	392	..	..	392	712
2	89	43	..	134	72	347	62	1	482	1,389	1,029	..	154	2,572	3,054
CIRCLE.															
Forests.															
1	33	1	..	35	1	33	1	..	35	..	700	..	..	700	735
3	34	1	..	38	3	34	1	..	38	13	1,129	..	..	1,142	1,180
1	30	..	..	31	1	30	..	..	31	5	913	..	..	918	949
1	..	..	..	1	1	..	..	..	1	36	1,797	..	..	1,833	1,834
..	1	..	..	1	..	1	..	..	1	9	104	..	..	113	114
..	20	..	..	20	..	20	..	..	20	51	820	..	..	871	891
..	..	5	..	5	1	..	5	..	6	1	125	..	..	126	132
6	118	7	..	131	7	118	7	..	132	115	5,588	..	..	5,703	5,835

Note for the Third Circle.

Cuddapah, North.— { Reserved forests—Actuals.
Unreserved lands—Estimated at 1 cubic feet of timber for one anna and 1 cubic foot of fuel for 2 pies.

Cuddapah, West.—Reserved forests—The figures are actuals.

Chingleput— { Reserved Forests—Timber and fuel by Government Agency and by purchasers are actuals.
Unreserved Lands.—Free grants of timbers are actuals, while timber and fuel by purchasers are based on money value realised.

Chittoor.—All figures in this statement except those under Purchasers, Timber and fuel against unreserves are actuals. The excepted items are estimates calculated on the money value obtained from sale of trees on darkhast and waste lands at 1 anna per cubic foot of timber and 3 pies per cubic foot of fuel.

Vellore, North.—Timber estimated at 2 annas per cubic foot and fuel at one anna per cubic foot.

Outturn (in thousands of cubic feet solid) of timber and fuel

Division.	Timber in the rough logs.					Timber in the rough poles.					Sawn or square timber.				
	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
															THIRD
					(*In thousands of cubic feet.*)										*II. Leased*
															III. Reserved
															IV. Unreserved
Cuddapah, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nellore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chingleput	..	13	..	..	13	..	..	..	..	..	..	..	..	..	..
Chittoor ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Vellore North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	..	13	..	..	13	..	..	..	..	..	..	..	..	..	..
Grand total ..	1	13	..	..	14	..	..	..	..	..	..	..	..	..	..
															FOURTH
															I. Reserved
Vellore, South	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Salem, East	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. North	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. Central ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..
															II. Leased
															III. Reserved
															IV. Unreserved
Vellore, South	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Salem, East	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. North	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1
Do. Central ..	..	..	..	..	..	..	..	2	..	2	..	..	..	..	..
Do. South	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	..	..	..	..	..	..	..	2	..	2	1	..	..	..	1
Grand total ..	1	..	..	..	1	..	..	2	..	2	1	..	..	..	1
															FIFTH
															I. Reserved
Kollegal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Coimbatore, North ..	2	..	..	..	2	..	..	..	..	..	7	..	..	..	7
Do. South ..	4	..	..	..	4	..	..	..	..	..	20	..	..	..	20
Madura	2	..	..	..	2	..	..	..	..	..	..	..	..	..	..
Tinnevelly	..	23	1	..	24	1	21	..	..	22	..	..	..	..	..
Total ..	8	23	1	..	32	1	21	..	..	22	27	..	..	..	27
															II. Leased
Coimbatore, South ..	11	..	..	..	11	..	..	..	..	..	..	..	..	..	..
															III. Reserved
															IV. Unreserved
Kollegal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Coimbatore, North ..	..	18	..	..	18	..	..	..	..	..	..	..	..	..	..
Madura	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tinnevelly	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..
Total ..	..	18	1	..	19	..	..	..	..	..	..	..	..	..	..
Grand total ..	19	41	2	..	62	1	21	..	..	22	27	..	..	..	27

Note for the Fourth Circle.

Note.—Removals by Government Agency—actuals.
(Sandalwood—factor of conversion 1 ton = 40 cubic feet.)
Free grantees— actuals.

Purchasers—timber and fuel.—Estimate quantity calculated upon money value generally at 1 anna per cubic foot for timber and 6 pies per cubic foot for fuel.

Note for the Fifth Circle.

Reserved and leased forests.—The figures given are actuals.

Unreserved lands.—Estimate based on money value collected.

during the year 1920-21 and agency of exploitation—*cont.*

Miscellaneous.					Total timber.					Fuel.					Total outturn.
Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	
(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
CIRCLE—*cont.*															
Forests—Nil.									(*In thousands of cubic feet.*)						
Lands—Nil.															
Lands.															
..	3	..	..	3	..	3	..	..	3	..	75	..	..	75	78
..	4	..	..	4	..	4	..	..	4	..	4	..	..	4	8
..	13	..	..	13	..	13	..	..	13	..	144	..	..	144	157
..	40	23	..	63	..	40	23	..	63	..	61	..	..	61	124
..	3	11	..	14	..	16	11	..	27	..	68	..	..	68	95
..	185	2	..	187	..	185	2	..	187	..	152	..	..	152	339
..	107	4	..	111	..	107	4	..	111	..	40	..	..	40	151
..	355	40	..	395	..	368	40	..	408	..	544	..	..	544	952
6	473	47	..	526	7	486	47	..	540	115	6,132	..	..	6,247	6,787
CIRCLE.															
Forests.															
3	4	..	..	7	3	4	..	..	7	3	152	..	..	155	162
3	..	..	..	3	4	..	..	..	4	..	18	..	..	18	22
..	..	..	..	..	..	..	..	..	..	..	180	..	..	180	180
3	..	..	..	3	3	..	..	..	3	1	55	..	..	56	59
..	..	..	..	..	..	..	..	..	..	..	348	..	..	343	348
1	..	..	..	1	1	..	..	..	1	2	116	..	..	118	119
10	4	..	..	14	11	4	..	..	15	6	869	..	..	875	890
Forests—Nil.															
Lands—Nil.															
Lands.															
..	57	6	..	63	..	57	6	..	63	..	47	..	..	47	110
..	11	1	..	12	..	11	1	..	12	..	9	..	..	9	21
..	28	4	..	32	..	28	4	..	32	..	286	1	..	287	319
..	35	1	..	36	1	35	1	..	37	..	27	..	..	27	64
..	94	..	..	94	..	94	2	..	96	..	35	..	..	35	131
..	148	3	..	151	..	148	3	..	151	..	173	..	..	178	324
..	373	15	..	388	1	373	17	..	391	..	577	1	..	578	969
10	377	15	..	402	12	377	17	..	406	6	1446	1	..	1,453	1,859
CIRCLE.															
Forests.															
1	..	..	..	1	1	..	..	..	1	11	122	..	..	133	134
..	..	..	..	..	9	..	..	..	9	..	561	..	..	561	570
1	5	..	..	6	25	5	..	..	30	..	177	..	..	177	207
..	7	..	..	7	2	7	..	..	9	3	608	..	..	611	620
..	..	..	..	..	1	44	1	..	46	1	1,720	..	..	1,721	1,767
2	12	..	..	14	38	56	1	..	95	15	3,188	..	..	3,203	3,298
Forests.															
2	..	..	..	2	13	..	..	..	13	..	..	..	..	..	13
Lands—Nil.															
Lands.															
..	3	..	..	3	..	3	..	..	3	..	3	..	..	3	6
..	..	..	..	..	..	18	..	..	18	..	9	..	..	9	27
..	148	..	..	148	..	148	..	..	148	..	116	..	..	116	264
..	..	..	..	..	..	..	1	..	1	..	65	3	..	68	69
..	151	..	..	151	..	169	1	..	170	..	193	3	..	196	366
4	163	..	..	167	51	225	2	..	278	15	3,381	3	..	3,399	31,677

Outturn (in thousands of cubic feet solid) of timber and fuel

Division	Timber in the rough logs.					Timber in the rough poles.					Sawn or square timber.				
	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
															SIXTH
					(*In thousands of cubic feet.*)										*I. Reserved*
Mangalore, North ..	25	..	..	..	25	..	..	..	..	..	..	..	..	..	..
Do. South ..	25	3	..	..	28	..	..	..	..	..	..	..	..	..	..
Malabar, North ..	..	..	..	..	..	11	..	..	..	11	20	34	..	..	54
Do. South ..	84	..	..	..	84	9	..	..	..	9	..	..	..	..	..
Nilgiris, The ..	..	..	..	..	..	2	..	..	..	2	..	..	..	..	..
Coimbatore, Central.	27	17	..	..	44	..	..	..	..	..	..	..	..	..	..
Total ..	161	20	..	..	181	22	..	..	..	22	20	34	..	..	54
															II. Leased
Malabar, South ..	158	1	..	..	159	5	..	..	..	5	..	..	..	..	..
															III. Reserved
Nilgiris, The ..	..	..	..	..	..	..	..	..	..	..	33	..	..	..	33
															IV. Unreserved
Mangalore, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	2	153	..	5	160	..	..	..	..	..	..	..	..	..	..
Malabar, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nilgiris, The ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Coimbatore, Central.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	2	153	..	5	160	..	..	..	..	..	..	..	..	..	..
Total VI Circle ..	321	174	..	5	500	27	..	..	..	27	53	34	..	..	87
Grand Total, Presidency.	620	778	54	5	1,457	181	118	12	38	349	115	51	1	4	171

Note for Sixth Circle.

REMARKS.—The figures are actuals except in the following cases:—

		Factor of conversion.
Mangalore, North—Outturn under "Purchasers" unreserved lands.	*Timber.*	The sale amount is converted into yield, the factor of conversion being 16 cubic feet per rupee.
	Fuel.	The sale amount is converted into yield, the factor of conversion being three pies per cubic foot.
Mangalore, South—Outturn under all agencies except "Government".		One tree = 25 cubic feet.
Malabar, North—Outturn under "Purchasers". Unreserved lands.	*Timber.*	Estimate based on money value collected at four annas per cubic foot.
	Fuel.	Estimate based on money value collected at two annas per cubic foot.
Nilgiris, The—Outturn under "Purchasers". Unreserved lands.		The sale amount is converted into yield at one anna a cubic foot.
Malabar, South—Reserved forests. 'Government'.	*Timber.*	Outturn under 1,500 cubic feet. One log = 20 cubic feet.
Reserved forests. 'Government'.	*Timber.*	Outturn under 9,000 cubic feet. Actuals based on standard cubical contents.
Reserved forests.	*Timber.*	Outturn under "purchasers". One set of spokes and felloes = 5 cubic feet.
	Fuel.	Outturn under "Government"—Calculated at ¼ cubic foot for karias and 5 cubic feet per cocoanut tree.
Leased forests	*Timber.*	Outturn under "Government". 1,000 cubic feet. One log = 20 cubic feet.
	Timber.	Outturn under "Government". 5,000 cubic feet. Actuals based on standard cubical contents.
Do. Under Purchasers		One set of spokes and felloes = 5 cubic feet.
Fuel—Outturn under "Government		Calculated at ¼ cubic foot per kari.

during the year 1920-21 and agency of exploitation—*cont.*

Miscellaneous.					Total timber.					Fuel.					Total outturn.
Government. (17)	Purchasers. (18)	Free-grantees. (19)	Right-holders. (20)	Total. (21)	Government. (22)	Purchasers. (23)	Free-grantees. (24)	Right-holders. (25)	Total. (26)	Government. (27)	Purchasers. (28)	Free-grantees. (29)	Right-holders. (30)	Total. (31)	(32)
CIRCLE.															
Forests.						(*In thousands of cubic feet*).									
..	6	..	..	6	25	6	..	..	31	79	364	..	..	443	474
..	..	..	..	..	25	3	..	..	28	68	41	..	..	109	137
..	..	..	..	..	31	34	..	..	65	..	..	..	..	..	65
..	1	..	..	1	93	1	..	..	94	1	..	..	..	1	95
..	..	..	..	..	2	..	..	..	2	231	12	..	..	243	245
..	..	..	..	..	27	17	..	..	44	23	1,413	..	..	1,436	1,480
..	7	..	..	7	203	61	..	..	264	402	1,830	..	..	2,232	2,496
Forests.															
..	2	..	..	2	163	3	..	..	166	2	..	..	..	2	168
Lands.															
..	..	..	..	..	33	..	..	..	33	..	..	..	..	..	33
Lands.															
..	418	1	11	430	..	418	1	11	430	..	265	..	..	265	695
..	..	..	..	..	2	153	..	5	160	8	94	..	..	102	262
..	13	..	..	13	..	13	..	..	13	..	3	..	..	3	16
..	81	..	..	81	..	81	..	..	81	..	..	..	..	..	81
..	83	1	..	84	..	83	1	..	84	..	224	..	..	224	308
..	595	2	11	608	2	748	2	16	768	8	586	..	..	594	1,362
..	604	2	11	617	401	812	2	16	1,231	412	2,416	..	..	2,828	4,059
37	1,778	124	12	1,951	963	2,725	191	59	3,938	2,182	17,137	4	250	19,573	23,511

ANNUAL FORM No. 77.

Forest Department, Madras Presidency.

Outturn of minor forest produce during the year 1920–21.

Circle.	Description of produce.	Produce removed or utilized					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value.	Value.	Value.	Value.
	Reserved Forests.	NO.	RS.	RS.	RS.	RS.	RS.
	Bamboos	30,733	395	65,351	15	222	(a) 65,893
	Grazing and fodder grass ..	..	..	44,490	12,375	592	57,457
	Other produce.	QRS.					
	Grass (hay, thatch, korai, etc.).	14,181	102	181	..	..	283
	Tamarind, soapnuts, galnuts, nux-vomica, shekoi, etc.	182	75	16,180	..	250	16,505
	Horns, honey, wax, resin, gum, skins, etc.	..	..	569	..	..	569
	Tangedu, etc., barks and fibres.	516	4	1,384	..	..	1,388
	Stone, gravel, earth, etc. ..	79,471	68	144	..	..	212
	Leaves for platters	..	..	1	..	..	1
	Date and palmyra leaves, stalks, etc.	..	..	1	..	..	1
	Miscellaneous including tree-tapping and tree-owner's fees.	4	6	256	..	..	262
	Total, minor produce ..	94,354	255	18,716	..	250	19,221
	Total, Reserved forests ..	..	560	1,28,557	(a) 12,390	1,064	1,42,571
	Reserved Lands.	NO.					
	Bamboos	1,525	8	86	..	..	94
	Grazing and fodder grass ..	..	..	1,719	..	..	1,719
	Other produce.	QRS.					
	Tamarind, soapnuts, galnuts, nux-vomica, shekoi, etc.	42	33	..	..	..	33
First Circle ..	Total, Reserved lands ..	..	41	1,805	..	..	1,846
	Unreserved Lands.	NO.					
	Bamboos	11,345	92	46,329	38	15	46,474
	Grazing and fodder grass ..	..	..	647	..	..	647
	Other produce.	QRS.					
	Grass (tharbi, korai, etc.). ..	3,892	30	366	6	..	402
	Tamarind, soapnuts, galnuts, nux-vomica, shekoi, etc.	231	183	19,933	..	..	20,116
	Horns, honey, wax, resin, gum, skins, etc.	..	..	372	..	..	372
	Tangedu, etc., barks and fibres.	..	..	1,416	..	..	1,416
	Stone, gravel, earth, etc. ..	296,177	375	984	..	..	1,359
	Leaves for platters	..	..	229	..	..	229
	Date and palmyra leaves, stalks, etc.	..	..	44	34	..	78
	Manure leaves and thorns ..	..	..	12	..	..	12
	Miscellaneous including tree-tapping and tree-owner's fees.	..	..	21,099	..	..	21,099
	Total, minor produce ..	300,300	588	44,455	40	..	45,083
	Total, Unreserved lands ..	..	680	91,431	78	(a) 15	(a) 92,204
	Abstract for the circle.						
	Bamboos in number	43,603	405	1,11,766	53	237	1,12,461
	Grazing and fodder grass ..	..	..	46,856	12,375	592	59,823
	Other produce in quarters ..	394,696	876	63,171	40	250	64,337
	Grand total, First Circle ..	..	1,281	2,21,793	12,468	1,079	2,36,621

(a) Corrected in the Chief Conservator's office.

Outturn of minor forest produce during the year 1920-21—*cont.*

Circle.	Description of produce.	Produce removed or utilized					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value.	Value.	Value.	Value.
		NO.	RS.	RS.	RS.	RS.	RS.
Second Circle ..	Bamboos	764,880	12,678	41,476	115	..	54,269
		QRS.					
	Grazing and fodder grass ..	..	..	2,54,257	..	5,067	2,59,324
	Grass (hay, thatch and grass) ..	..	..	1,162	39	..	1,201
	Tamarind, soapnuts and nux-vomica.	9,575	4,677	34,310	..	..	38,987
	Stone, gravel and earth ..	..	..	20,892	45	..	20,937
	Date, palmyra leaves and platter leaves.	..	..	908	613	..	1,521
	Manure leaves and thorns ..	..	..	1,798	..	..	1,798
	Thummari leaves	..	..	2,392	..	..	2,392
	Honey, wax, resin, gum, and gallnuts.	..	..	1,272	..	..	1,272
	Tangedu bark, fibres, seeds, etc.	118	443	1,48,123	10	1	1,48,577
	Miscellaneous including tree tapping fees and Amaroy.	..	..	61,789	..	..	61,789
	Total ..	9,693	5,120	272,646	707	1	2,78,474
		NO.					
Third Circle ..	Bamboos	7,975	91	13,454	176	..	13,721
		QRS.					
	Grazing and fodder grass ..	..	..	2,01,812	219	136	2,02,167
		QRS.					
	Grass (thatch, korai, etc.) ..	2,027	125	3,232	..	..	3,357
	Honey, wax, etc..	..	..	60	..	..	60
	Tangedu, etc., barks	102	240	38,306	..	..	38,546
	Date, palmyra and leaves ..	..	..	1,557	723	..	2,280
	Stones, gravel and earth ..	..	..	4,881	29	..	4,910
	Manure leaves, toopi leaves etc.	..	..	3,958	..	..	3,958
	Tamarind, soapnuts and nuxvomica.	8,608	43,800	34,946	..	..	78,746
	Other miscellaneous produce including tree-owners' fees.	903	2,764	40,158	..	..	42,922
	Total ..	11,640	46,929	1,27,098	752	..	1,74,779
		NO.					
	Total of grass and grazing and minor produce.	11,640	46,929	3,28,910	971	136	3,76,946
		NO.					
Fourth Circle ..	Bamboos	668	330	49,553	13	..	49,896
	Grass and grazing	..	..	1,64,457	..	..	1,64,457
		QRS.					
	Grass (thatch, korai, etc.) ..	..	..	1,894	..	..	1,894
	Tamarid, soapnuts, gallnuts, etc.	345	558	7,336	..	..	7,894
		..	..	46,821	..	..	46,821
	Avaram, vembadam, etc., barks.	..	..	2,938	..	..	2,938
	Stone, gravel and earth ..	1,040	100	17,958	..	..	18,058
	Manure leaves, etc.	..	..	28	2	..	30
	Date, palmyra, etc. leaves ..	1	7	..	..	..	7
	Honey, wax, etc.	404	187	57,889	..	..	58,076
	Miscellaneous, including tree-owner's fees.	1,790	852	1,34,864	2	..	1,35,718
	Total ..	..	1,182	3,48,874	15	..	3,50,071
	Grand total ..						
	Reserved forest.						
Fifth Circle ..	Bamboos	6,827	131	13,810	1	31	13,973
	Grazing and fodder grass ..	..	..	1,10,879	894	..	1,11,773

Outturn of minor forest produce during the year 1920–21—*cont.*

Circle.	Description of produce.	Produce removed or utilized					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value.	Value.	Value.	Value.
	Other produce.	QRS.	RS.	RS.	RS.	RS.	RS.
	Grass (thatch, korai, etc.) ..	836	12	5,003	..	..	5,015
	Dammer, turmeric, pepper, cardamoms, etc.	..	..	10,387	..	..	10,387
	Tamarind, soapnuts, gallnuts, nux-vomica, shekoi, etc.	..	..	17,794	..	..	17,794
	Horns, honey, wax, gum, resin, skin, etc.	44	292	6,393	..	..	6,685
	Avaram, vembadam, etc., barks and fibres.	..	..	28,173	..	..	28,173
	Stones, earth, gravel, etc. ..	..	..	1,050	..	..	1,050
	Manure leaves, thorns, etc. ..	..	..	1,221	..	..	1,221
	Date and palmyra leaves ..	..	..	3,516	..	881	4,397
	Miscellaneous	3	629	6,369	..	..	6,998
Fifth Circle—*cont* ..	Total ..	883	933	79,906	..	881	81,720
	Unreserved lands.						
	Other produce.						
	Miscellaneous	..	..	3,752	..	..	3,752
	Gravel, stones, earth, etc. ..	..	..	578	..	..	578
	Date and palmyra leaves ..	..	..	..	42	..	42
	Total ..	..	..	4,330	42	..	4,372
	Abstract for the Fifth Circle.						
	Bamboos	6,827	131	13,810	1	31	13,973
	Grazing and fodder grass ..	..	..	1,10,879	894	..	1,11,773
	Other produce	883	933	84,236	42	881	86,092
	Grad total ..	7,710	1,064	2,08,925	937	912	2,11,838
	Reserved forests.	NO.					
	Bamboos	60,881	3,279	10,498	52	..	13,829
	Grazing and fodder grass ..	..	..	39,404	97	..	39,501
	Other produce.	QRS.					
	Nux-vomica	4	36	205	..	..	241
	Elephant tusks	9	2,291	..	..	..	2,291
	Vengai gum	18	232	..	..	..	232
	Thatching grass and stone metal	..	..	898	729	..	1,627
	Blue gum, leaves and seeds ..	29	79	315	..	..	394
	Dammer, turmeric, pepper, gallnuts, etc.	..	..	9,437	..	..	9,437
	Manure leaves	..	..	1,004	..	..	1,004
	Usufruct of trees	..	..	80	..	..	80
	Rent of trees tapped	..	..	14	..	..	14
	Bark and brushwood	..	..	237	..	..	237
	Rent of cardamom forest ..	..	..	660	..	..	660
	Rent of gardens, etc.	..	..	116	..	..	116
	Avaram bark	..	..	1,150	..	..	1,150
Sixth Circle ..	Miscellaneous	..	..	6,948	..	..	6,948
	Total ..	60	2,638	21,064	729	..	24,431
	Leased forests.	NO.					
	Bamboos	153,523	6,141	3	..	..	6,144
	Reserved lands.						
	Bamboos	..	..	..	..	..	31
	Grazing and fodder grass ..	..	..	611	643	..	1,254
	Other produce.	QRS.					
	Elephant tusks	15	391	..	..	..	391
	Stone metal	..	..	10	5	..	15
	Total ..	15	391	10	5	..	406
	Unreserved lands.	NO.					
	Bamboos	594	113	187	..	..	300

Outturn of minor forest produce during the year 1920-21—*cont.*

Circle.	Description of produce.	Produce removed or utilized.					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value	Value.	Value.	Value.
	Other produce.	QRS.	RS.	RS.	RS.	RS.	RS.
Sixth Circle—*cont.*	Tamarind, soapnuts, gallnuts, shekoi, etc.	220	440	5,249	..	..	5,689
	Usufructs of trees	..	..	87	..	..	87
	Stone and gravel	..	..	279	..	..	279
	Manure leaves	..	..	6	..	..	6
	Rent of trees tapped	..	..	1,577	..	..	1,577
	Nux-vomica	..	..	1,358	..	..	1,358
	Avaram bark	..	..	105	..	..	105
	Miscellaneous	..	..	607	..	..	607
	Total ..	220	440	9,268	..	..	9,708
	Abstract for the Sixth Circle.						
	Bamboos	NO. 214,998	9,533	10,719	52	..	20,304
	Grazing and fodder grass ..	..	..	40,015	740	..	40,755
	Other produce	QRS. 295	3,469	30,342	734	..	34,545
	Grand total ..	..	13,002	81,076	1,526	..	95,604
Total Presidency ..	Bamboos	1038,951	23,168	240,778	410	268	264,624
	Grazing and fodder grass ..	..	..	818,276	14,228	5,795	838,299
	Other produce	417,207	58,509	1,128,179	2,509	1,268	1,190,465
	Grand total, Presidency ..	..	81,677	2,187,233	17,147	7,331	2,293,388

ANNUAL FORM No. 78.

Forest Department, Madras Presidency.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1920–21.

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
TIMBER (IN THOUSANDS OF CUBIC FEET).					
First Circle.					
Ganjam	76	335	411	(a) 71, 20; (b) 1	319
Vizagapatam	1	1	2	1; (a) 1	..
Godavari, Upper	2	82	84	22; (a) 3	59
Do. Lower	1	2	3	(a) 2	1
Total	80	420	500	121	379
Second Circle.					
Bellary	..	..	..	..	..
Anantapur	..	..	..	..	..
Guntur	1	..	1	1	..
Kurnool, East	2	12	14	9	5
Do. South	3	5	8	4	4
Do. West	11	55	66	38	28
Total	17	72	89	52	37
Third Circle.					
Cuddapah, North	..	1	1	1	..
Do. South	1	3	4	4	..
Do. West	1	1	2	1	1
Nellore	..	1	1	1	..
Chingleput	..	..	..	..	..
Chittoor	1	..	1	..	1
Vellore, North	..	1	1	1	..
Total	3	7	10	8	2
Fourth Circle.					
Vellore, South	1	3	4	2	2
Do. West	2	4	6	3	3
Salem, East	..	..	..	..	..
Do. North	1	4	5	3	2
Do. Central	..	..	..	..	..
Do. South	1	1	2	1	1
Total	5	12	17	9	8
Fifth Circle.					
Kollegal	1	1	2	(c) 1	1
North Coimbatore	(d) 6	(c) 9, 1	16	(b) 11, 1	4
South Coimbatore	157	38	195	72; (a) 3	120
Madura	2	2	4	1	3
Tinnevelly	1	1	2	1	1
Total	167	52	219	90	129
Sixth Circle.					
Mangalore, North	12	25	37	(a) 30, 1	6
Do. South	92	27	119	(b) 36, 1	82
Malabar, North	80	31	111	(a) 106, 1	4
Do. South	453	256	709	(a) 200, 2; (b) 27	480
The Nilgiris	13	35	48	34	14
Coimbatore, Central	47	27	74	18	56
Total	897	401	1,098	456	642
Grand total, Presidency	969	964	1,933	736	1,197

(a) Used departmentally.
(b) Written off the accounts.
(c) Transferred from Kollegal to North Coimbatore.
(d) Revised figure.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1920-21—*cont.*

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
FUEL (IN THOUSANDS OF CUBIC FEET).					
First Circle.					
Ganjām	20	203	223	156 (*a*) 35	32
Vizagapatam	..	6	6	1	5
Gōdāvari, Upper	8	13	21	11 (*a*) 1	9
Do. Lower	1	16	17	15	2
Kistna	..	7	7	7	..
Total	29	245	274	226	48
Second Circle.					
Bellary	..	4	4	4	..
Anantapur	..	1	1	1	..
Guntūr	..	17	17	5	12
Kurnool, East	27	59	86	19	67
Do. South	9	..	9	9	..
Do. West	168	1,308	1,476	374	1,102
Total	204	1,389	1,593	412	1,181
Third Circle.					
Cuddapah, North	..	..	..	..	..
Do. South	2	13	15	13	2
Do. West	..	5	5	4	1
Nellore	9	36	45	19	26
Chingleput	4	9	13	13	..
Chittoor	..	51	51	49	2
Vellore, North	..	1	1	..	1
Total	15	115	130	98	32
Fourth Circle.					
Vellore, South	..	3	3	3	..
Do. West	..	3	3	3	..
Salem, East	..	..	..	..	..
Do. North	..	1	1	1	..
Do. Central	..	..	..	..	..
Do. South	..	3	3	..	3
Total	..	10	10	7	3
Fifth Circle.					
Kollegal	..	11	11	11	..
North Coimbatore	1	..	1	1	..
Madura	..	3	3	2	1
Tinnevelly	..	1	1	..	1
Total	1	15	16	14	2
Sixth Circle.					
Mangalore, North	95	79	174	168 (*b*) 5	1
Do. South	127	76	203	95 (*b*) 1	107
Malabar, South	1	3	4	3	1
The Nilgiris	197	231	428	190 (*b*) 12 (*a*) 1	225
Coimbatore, Central	..	23	23	18	5
Total	420	412	832	493	339
Grand total, Presidency	669	2,186	2,855	1,250	1,605

(*a*) Used departmentally. (*b*) Written off the accounts.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1920-21—*cont.*

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots
BAMBOOS (IN NUMBER).					
First Circle.					
Ganjam	..	18,830	18,830	(a) 18,830	..
Vizagapatam	340	1,323	1,663	623 (a) 940	100
Godavari, Upper	..	12,745	12,745	(a) 12,745	..
Do. Lower	502	10,705	11,207	(a) 10,507	700
Total ..	842	43,603	44,445	43 645	800
Second Circle.					
Bellary	..	..	..	..	..
Anantapur	..	..	..	..	..
Guntur	..	..	..	..	..
Kurnool, East	12,690	166,446	179,136	159,770	19,366
Do. South	320	200	520	520	..
Do. West	65,199	598,234	663,433	617,933	45,500
Total ..	78,209	764,880	843,089	778,223	64,866
Third Circle.					
Cuddapah, North	..	..	..	..	..
Do. South	1,376	3,485	4,861	4,861	..
Do. West	..	240	240	240	..
Nellore	..	..	..	..	..
Chingleput	..	..	..	..	..
Chittoor	70	1,250	1,320	700	620
Vellore, North	..	3,000	3,000	3,000	..
Total ..	1,446	7,975	9,421	8,801	620
Fourth Circle.					
Vellore, South	..	..	..	..	..
Do. West	..	..	..	..	..
Salem, East	..	..	..	..	..
Do. North	102	620	722	717	5
Do. Central	..	..	..	..	..
Do. South	..	48	48	48	..
Total ..	102	668	770	765	5
Fifth Circle.					
Kollegal	..	226	226	226	..
North, Coimbatore	95	5,539	5,634	815 (a) 4,487	332
Tinnevelly	..	1,062	1,062	1,062	..
Total ..	95	6,827	6,922	6,590	332
Sixth Circle.					
Mangalore, North	1,560	..	1,560	1,560	..
Do. South	4,147	6,449	10,596	5,444 (a) 398	4,754
Malabar, North	..	5	5	(a) 5	..
Do. South	404,214 (c) 50,370	204,023	658,607	204,433 (a) 13,616 (b) 20,852	419,706
Coimbatore, Central	150	4,521	4,671	4,234	437
Total ..	460,441	214,998	675,439	250,542	424,897
Grand total, Presidency ..	541,135	1,038,951	1,580,086	1,088,566	491,520

(a) Used departmentally. (b) Written off the accounts.
(c) Added as per revised figures furnished by the District Forest Officer.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1920-21—*cont.*

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
MINOR FOREST PRODUCE (QUARTERS OF 28 LB.).					
First Circle.					
Ganjām	54	381,252	381,306	54 (a) 381,252	..
Vizagapatam	142	260	402	28 (a) 232 (e) 50	92
Gōdāvari, Upper	400	8,742	9,142	40 (a) 8,816	286
Do. Lower	442	4,438	4,880	22 (a) 523	4,335
Kistna	25	4	29	(a) 25	4
Total ..	1,063	394,696	395,759	391,042	4,717
Second Circle.					
Bellary	1,600,032	30	1,600,062	49	1,600,013
Anantapur	56	20	76	62	14
Guntūr	29	8	37	33	4
Kurnool, East	1,155	7,718	8,873	3,856	5,017
Do. South	92	80	172	70	102
Do. West	9,307	1,837	11,144	10,503	641
Total ..	(b) 1,610,671	9,693	1,620,364	14,573	1,605,791
Third Circle.					
Cuddapah, North	48	1,307	1,355	1,353	2
Do. South	884	775	1,659	1,530	129
Do. West	56	40	96	91	5
Nellore	2,369	8,803	11,112	8,885	2,227
Chingleput	..	..	..	..	..
Chittoor	85	264	349	122	227
Vellore, North	929	451	1,380	1,055	325
Total ..	4,311	11,640	15,951	13,036	2,915
Fourth Circle.					
Vellore, South	217	160	337	192	185
Do. West	361	159	520	292	228
Salem, East	(c) 80	1,040	1,120	972	148
Do. North	949	346	1,295	1,223	72
Do. Central	..	56	56	19	37
Do. South	3,817	29	3,846	103	3,743
Total ..	5,424	1,790	7,214	2,801	4,413
Fifth Circle.					
Kollegal	123	17	140	53	87
North Coimbatore	(f) 266	612	878	48 (a) 640	190
South Coimbatore	(h)	3	3	3	(h)
Madura	6	27	33	15	18
Tinnevelly	40	224	264	264	..
Total ..	435	883	1,318	1,023	295
Sixth Circle.					
Mangalore, North	1	..	1	..	1
Do. South	15,270	224	15,494	6,031	9,463
Malabar, North	1	19	20	20	..
The Nilgiris	31	44	75	33 (d) 1	41
Coimbatore, Central	1	8	9	5	4
Total ..	15,304	295	15,599	6,090	9,509
Grand total, Presidency ..	1,637,208	418,977	2,056,205	428,565	1,627,640

(a) Used departmentally. (b) Includes 1,600,000 qrs. of Manganese ore.
(c) Revised figures furnished by District Forest Officer.
(d) Written off the accounts.
(e) Supplied to the Superintendent, Central Jail, Vizagapatam, for experiment.
(f) Revised figure.
(g) Includes 1,147 cubic feet Duing deficit.
(h) Less than one quarter.

ANNUAL FORM No. 79.

Forest Department, Madras Presidency.

Statement showing the value of timber and other produce at sale depots for the year 1920–21.

District.	Description of timber or produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.	
		Number.	Cubic feet.	Value	Number.	Cubic feet.	Value.	In favour of the year.	Against the year.
	First Circle.			RS.			RS.	RS.	RS.
Ganjam ..	Timber	..	2,933	4,889	..	3,700	7,821	2,932	..
	Second Circle.								
Bellary ..	Timber	..	..	..	..	..	..	..	..
	Fuel	..	..	..	..	..	..	..	..
	Minor produce ..	..	..	..	..	..	..	..	..
Anantapur ..	....	..	..	..	..	..	..	..	..
Guntur ..	....	..	..	..	..	..	..	..	..
Kurnool, East.	....	..	..	..	..	..	..	..	..
Kurnool, South.	Timber	..	3,408	1,704	..	3,682	921	..	783
	Fuel	..	8,625	162	..	..	..	..	162
	Minor produce .	..	..	..	..	..	..	..	..
Kurnool, West.	....	..	..	..	..	..	..	..	..
	Third Circle.								
Nellore ..	Timber	..	37	37	..	110	27	..	10
	Fuel	..	9,260	1,158	..	26,007	1,625	467	..
	Minor forest produce.	MDS. 2,309	..	4,180	QRS. 2,227	..	16,591	12,411	..
Vellore, North.	Timber	..	100	12	..	..	..	..	12
	Fuel	..	300	18	..	530	32	14	..
	Minor forest produce.	QRS. 929	..	1,858	QRS. 325	..	400	..	1,458
	Fourth Circle.								
Vellore, South.	Timber	..	212	(*a*) 7,600	..	891	36,286	28,686	..
Vellore, West.	Timber	..	(*b*) 465	(*b*)16,547	..	1,325	45,528	28,981	..
	Minor forest produce.	QRS. 3	..	59	..	..	..	..	59
Salem, East ..	....	..	..	..	..	..	..	..	..
Salem, North.	Timber	..	1,072	13,578	..	1,982	24,576	10,998	..
	Bamboos ..	NO. 102	..	51	NO. 5	..	2	..	49
	Minor forest produce.	QRS. 949	..	388	QRS. 72	..	77	..	311
Central Salem.	Timber	..	94	227	..	1	24	..	203
Salem, South.	Timber	..	506	815	..	430	755	..	60
Total value.	....	..	..	39,265	..	..	1,07,248	67,983	..
	Fifth Circle.								
Kollegal ..	Timber	..	872	436	..	..	..	..	436
	Minor produce ..	QRS. 123	..	246	..	..	..	..	246
Coimbatore, North.	Timber	..	5,593	1,30,209	..	3,630	87,757	..	42,452
	Fuel	..	912	57	..	440	27	..	30
	Bamboos	95	..	1	..	332	3	2	..
	Minor produce ..	QRS. 133	..	19	QRS. 190	..	28	9	..
Coimbatore, South.	Timber	..	18,908	23,739	..	10,728	14,708	..	9,031
	Minor produce ..	*	..	3	*	..	35	32	..

(*a*) Correct value ; the amount given in the last return is incorrect.
(*b*) Revised figures furnished by District Forest Officer.
* Less than one quarter.

Forest Department, Madras Presidency—cont.

Statement showing the value of timber and other produce at sale depots for the year 1920-21—*cont.*

District.	Description of timber or produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.	
		Number.	Cubic feet.	Value.	Number.	Cubic feet.	Value.	In favour of the year.	Against the year.
	Fifth Circle—cont.			Rs.			Rs.	Rs.	Rs.
Madura ..	Timber	..	2,228	688	..	3,009	892	204	..
	Fuel	..	230	14	..	1,400	88	74	..
	Minor produce ..	QRS. 6	..	5	QRS. 18	..	6	1	..
Tinnevelly ..	Timber	..	971	125	..	624	136	11	..
	Fuel	..	175	18	..	1,063	41	23	..
	Minor produce ..	QRS. 1	..	6	QR. 1	..	19	13	..
	Sixth Circle.								
Mangalore, North.	Timber	..	6,863	4,374	..	4,646	2,904	..	1,470
Mangalore, South.	Timber	..	7,247	7,247	..	4,816	4,816	..	2,431
	Fuel	..	14,490	2,147	..	396	59	..	2,088
Malabar, North.	Timber	..	209	575	..	95	142	..	433
Malabar, South.	Timber	..	45,204	90,408	..	88,718	1,80,408	90,000	..
	Fuel	..	855	29	..	442	88	59	..
	Bamboos	33,561	..	2,001	53,263	..	2,125	124	..
The Nilgiris.	Timber	..	13,352	26,702	..	13,663	21,800	..	4,902
	Fuel	..	2,961	354	..	6,340	817	463	..
	Minor produce ..	QRS. 31	..	391	QRS. 41	..	400	9	..
	ABSTRACT.								
First Circle.	Timber	..	2,933	4,889	..	3,700	7,821	2,932	..
Second Circle.	Timber	..	3,408	1,704	..	3,682	921	..	..
	Fuel	..	8,625	162	..	..	..	..	..
	Minor produce ..	..	..	..	..	..	..	..	..
	Total value ..	..	..	1,866	..	..	921	..	945
Third Circle.	Timber	..	137	49	..	110	27	..	22
	Fuel	..	9,560	1,176	..	26,537	1,657	481	..
	Minor produce ..	QRS. 3,238	..	6,038	MDS. 2,552	..	16,991	10,953	..
	Total value ..	..	..	7,263	..	..	18,675	11,412	..
Fourth Circle	Timber	..	2,349	38,767	..	4,629	1,07,169	68,402	..
	Bamboos	102	..	51	5	..	2	..	49
	Minor forest produce.	QRS 952	..	447	72	..	77	..	370
	Total value ..	..	..	39,265	..	..	1,07,248	67,983	..
Fifth Circle.	Timber	..	28,572	1,55,197	..	17,991	1,03,493	..	51,704
	Fuel	..	1,317	89	..	2,903	156	67	..
	Bamboos	95	..	1	..	332	3	2	..
	Minor produce ..	QRS 263	..	279	QRS. 209	..	88	..	191
	Total value ..	..	..	1,55,566	..	..	1,03,740	..	51,820
Sixth Circle.	Timber	..	72,875	1,29,306	..	111,938	2,10,070	80,764	..
	Fuel	..	18,306	2,530	..	7,178	964	..	1,566
	Bamboos	33,561	..	2,001	53,263	..	2,125	124	..
	Minor produce ..	QRS 31	..	391	QRS. 41	..	400	9	..
	Total value ..	..	..	1,34,228	..	..	2,13,559	79,331	..
	Grand total, Presidency.	..	..	343,077	..	..	451,964	108,887	..

Summary of revenue of the different districts

Head of account.	First Circle							Second
	Direction.	Ganjam.	Vizagapatam.	Godavari, Upper.	Godavari, Lower.	Kistna.	Total.	Direction.
Receipts.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	
I. Timber and other produce removed from the forests by Government Agency—								
(*a*) Timber	..	14,657	..	14,109	60	..	28,826	..
(*b*) Firewood and charcoal ..	104	1,027	23	1,858	1,314	51	4,377	..
(*c*) Bamboos	..	..	..	..	..	..	..	..
(*d*) Sandalwood	..	..	..	..	..	..	..	..
(*e*) Grass and other minor produce.	..	3	10	..	18	18	49	..
II. Timber and other produce removed from the forests by consumers or purchasers—								
(*a*) Timber	..	9,000	959	1,986	31,570	2,687	46,202	..
(*b*) Firewood and charcoal ..	..	32,850	7,217	575	50,586	9,682	1,00,910	..
(*c*) Bamboos	..	4,856	14,498	17,561	67,057	5,845	1,09,817	..
(*d*) Grazing and fodder grass..	..	9,571	3,539	6,485	14,540	12,721	46,856	..
(*e*) Other produce	1,233	3,544	7,616	57	20,902	8,369	41,721	..
(*f*) Rents for trees tapped ..	..	1,316	— 87	..	6,315	11,872	19,416	..
(*g*) Other items	..	..	..	..	..	..	..	..
(*h*) Commutation	..	..	..	..	..	..	..	..
III. Confiscated drift and waif-wood ..	..	182	80	757	1,959	78	3,056	..
IV. Revenue from forest not managed by Government—								
(*a*) Revenue from shared and private forests.	..	..	..	..	..	..	..	..
V. Miscellaneous—								
(*a*) Fines and forfeitures ..	1	2,573	2,018	602	5,582	2,755	13,531	..
(*b*) Other sources	23	2,558	264	266	6,350	1,233	10,794	..
Total, Receipts ..	1,361	82,137	36,237	44,256	2,06,253	55,311	4,25,555	..

Budget heads.	Second Circle								Fourth Circle.
	Bellary.	Anantapur.	Direction.	Forest Engineer.	Vellore, South.	Vellore, West.	Salem, East.	Salem, North.	Salem, Central.
Receipts.	RS.	RS.	RS.	Rs.	RS.	RS.	RS.	RS.	RS.
I. Timber and other produce removed from the forests by Government Agency—									
(*a*) Timber	2	..	..	..	..	237	..	862	..
(*b*) Firewood and charcoal ..	95	24	..	..	97	21	41	143	..
(*c*) Bamboos	..	..	..	..	..	..	..	380	..
(*d*) Sandalwood	..	..	(*a*) 1,83,290	..	(*a*) 45,294	(*a*) 1,27,538	..	9	..
(*e*) Grass and other minor produce.	23	577	..	..	10	48	4,084	1,056	2,031
II. Timber and other produce removed from the forests by consumers or purchasers—									
(*a*) Timber	4,119	10,861	..	..	7,116	1,371	7,038	2,165	5,619
(*b*) Firewood and charcoal ..	9,352	6,156	..	..	7,283	2,172	1,16,992	2,131	18,135
(*c*) Bamboos	1	255	..	..	26,418	4,894	12,342	2,746	16,609
(*d*) Grazing and fodder grass ..	26,988	56,631	..	..	30,119	27,327	37,329	16,242	27,556
(*e*) Other produce	60,146	1,27,416	(*b*) 206	..	15,615	14,847	17,972	10,426	11,095
(*f*) Rents for trees tapped ..	21,661	14,597	..	..	3,571	575	481	1,689	132
(*g*) Other items	..	..	..	..	1	20	— 625	324	..
(*h*) Commutation	..	..	..	..	..	..	..	..	900
III. Confiscated drift and waif-wood ..	123	126	..	..	206	338	192	11	138
IV. Revenue from forest not managed by Government—									
(*a*) Revenue from shared and private forests.	..	..	..	..	..	..	..	..	..
V Miscellaneous—									
(*a*) Fines and forfeitures ..	5,971	8,276	..	..	14,079	4,516	9,963	1,472	4,505
(*b*) Other sources	559	505	(*c*) 66	70	467	418	— 11,478	806	3,920
Total, Receipts ..	1,29,040	2,25,424	1,83,562	70	1,50,276	1,84,322	1,94,331	40,482	85,640

Budget heads.	Fourth Circle.			
	Salem, South.	Total.	Direction.	
Receipts.	RS.	RS.	RS.	
I. Timber and other produce removed from the forests by Government Agency—				
(*a*) Timber	106	1,205	* 574	
(*b*) Firewood and charcoal ..	13	315	..	
(*c*) Bamboos	..	380	..	
(*d*) Sandalwood	..	3,56,131	†2,55,256	
(*e*) Grass and other minor produce.	..	7,229	..	
II. Timber and other produce removed from the forests by consumers or purchasers—				
(*a*) Timber	14,606	37,915	‡ 10,028	
(*b*) Firewood and charcoal ..	26,659	1,68,372	..	
(*c*) Bamboos	6,270	69,279	..	
(*d*) Grazing and fodder grass ..	25,961	1,64,534	..	
(*e*) Other produce	46,799	1,16,960	* 1,433	
(*f*) Rents for trees tapped ..	51	6,499	..	
(*g*) Other items	..	— 280	..	
(*h*) Commutation	..	900	..	
III. Confiscated drift and waif-wood ..	238	1,123	..	
IV. Revenue from forest not managed by Government—				
(*a*) Revenue from shared and private forests.	..	..	..	
V Miscellaneous—				
(*a*) Fines and forfeitures ..	13,426	47,961	..	
(*b*) Other sources	955	— 4,776	(*c*) 5,991	
Total, Receipts ..	1,35,084	9,73,747	2,73,282	

The revenue under direction is distributed as follows :—
II (*e*) Direction Rs. 83, Godavari, Lower Rs. 1,150.
V (*b*) ,, Rs. 2, Ganjam Rs. 16, Vizagapatam Rs. 5.

(*a*) Revenue under direction, South and West Vellore, is distributed as follows .—
Salem, East, Rs. 11,395 ; Salem, North, Rs. 1,12,087 ; Salem, Central, Rs. 3,221 ; Salem, South, Rs. 25,053 ; Vellore, South, Rs. 1,06,246 ; Vellore west, Rs. 89,391 : Tinnevelly, Rs. 2,830 and South Cuddapah, Rs. 899.

(*b*) Vellore, West, Rs. 100 and Salem, South, Rs. 106.

(*c*) Forest Engineer, Rs. 66.

FORM No. 80.

Madras Presidency.

for the year 1920–21.

Circle.					Third Circle.								
Guntur.	Kurnool, East.	Kurnool, South.	Kurnool, West.	Total	Direction.	Cuddapah, North.	Cuddapah, South.	Cuddapah, West.	Nellore.	Chingleput.	Chittoor.	Vellore, North.	Total.
RS.	RS.	RS.	RS.	RS.		RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
— 27	4,349	3	10,541	14,868	..	18	488	..	23	100	3	50	682
64	275	..	2,777	3,235	..	21	378	32	353	2,532	1,077	47	4,440
..	3,014	..	9,654	12,668	..	..	..	..	..	..	.	42	42
..	..	..	..	..	..	..	8	..	..	..	..	1	9
25	3,224	12	1,556	5,417	..	..	1	3	46,125	..	459	578	47,166
4,289	640	2,349	4,996	27,164	..	1,225	2,934	16,846	6,735	1,693	12,351	13,383	49,167
17,762	233	19,098	4,243	56,844	..	4,654	2,428	4,620	34,023	11,062	5,406	12,040	74,233
— 175	1,085	40,135	..	41,301	..	1,556	267	1,109	..	407	851	7,176	11,366
71,765	44,527	17,111	35,590	2,52,612	..	17,712	7,078	21,409	64,551	25,657	39,333	26,443	2,02,183
7,675	6,754	5,004	31,247	2,38,242	..	5,001	10,302	13,004	8,450	5,150	52,552	22,372	1,16,831
4,336	733	1,837	6,439	49,603	..	464	1,860	2,393	7,330	4,040	4,566	5,633	26,286
..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..
127	90	777	1,404	2,647	..	298	228	422	965	160	124	70	2,267
..	..	..	..	..	..	..	..	..	..	..	..	..	..
23,825	2,486	5,677	9,340	55,575	..	3,873	3,995	11,428	8,302	4,963	13,299	17,153	63,013
770	— 2,135	2,035	2,830	4,564	..	403	546	539	1,299	2,989	749	2,861	9,386
1,30,436	65,275	94,038	1,20,527	7,64,740	..	35,225	30,513	65,805	1,78,156	58,753	1,30,770	1,07,849	6,07,071

Fifth Circle.							Sixth Circle.							
Kollegal.	North Coimbatore.	South Coimbatore.	Madura.	Tinnevelly.	Forest Engineer.	Total.	North Mangalore.	South Mangalore.	North Malabar.	South *Malabar.	The Nilgiris.	Central Coimbatore.	Forest Research Office.	Total.
RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
4	898	81,612	— 24	27	..	82,591	13,372	29,987 / (e) 338	82,764	3,13,893	6,648	4,565	..	4,50,567
142	..	..	116	59	..	317	4,647	6,941	..	368 / (e) 235	30,585	537	..	43,313
..	..	..	..	9	..	9	20	768	..	6,265	..	261	..	7,314
..	1,18,868	..	3	..	..	3,74,127	1,941	3,845	..	..	..	178	..	5,964
..	46	..	49	..	..	95	400	2,295	457	..	142	1,209	3	4,506
179	3,342	6,688	11,713	17,817	..	49,767	27,346	10,369	15,586	3,527	9,711	5,242	..	71,781
2,254	19,769	9,858	49,574	1,06,206	..	1,87,661	20,372	1,526	320	6	5,106	45,620	..	72,950
2,164	8,778	4,488	2,295	1,023	..	18,748	871	749	341	3	613	8,238	..	10,815
30,847	44,271	3,390	24,288	7,593	..	1,10,389	5,823	8,021	4,587	..	9,038	12,546	..	40,015
4,659	12,746	7,406	(b)37,169	23,652	..	87,065	4,401	4,581 / (e) 1,433	3,737 / ..	2,075 / (e) 27	1,392	10,101	..	27,747
76	..	..	..	..	..	76	841	355	..	..	..	..	..	1,196
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
242	90	152	396	214	..	1,094	243	270	89	441	38	204	..	1,285
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1,911	4,787	2,627	6,503	5,830	..	21,658	2,992	4,162	207	342	1,255	6,970	..	15,928
2,312	4,540	(c) 52,723	6,621	2,471	145	74,803	806	2,753	4,701	40,802	10,665	23,553	10	83,290
44,790	2,17,635	1,68,944	1,38,703	1,64,901	145	(d) 10,08,400	84,075	77,393	1,12,789	3,67,984	75,193	1,19,224	13	8,36,671

* Relates to Sixth Circle.

† Rs. 40,211 relates to Kollegal and the balance to North Coimbatore.

‡ Rs. 10,000 pertains to South Coimbatore and Rs. 28 to Sixth Circle.

(a) Includes Rs. 5,880 pertaining to South Coimbatore.

(b) Includes Rs. 1,800 pertaining to Fourth Circle.

(c) Excludes Rs. 14,875 sale-proceeds of elephants credited in the accounts of the Sixth Circle.

(d) The revenue for the Fifth Circle after making the above alterations comes to Rs. 10,19,440.

(e) Credited under 'Direction' Fifth Circle.

Summary of expenditure of the different districts for the Forest year 1920–21.

Head of account.	First Circle.							Second.		
	Direction.	Ganjam.	Vizagapatam.	Godavari, Upper.	Godavari, Lower.	Kistna.	Total.	Direction.	Bellary.	Anantapur.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.
I. Refunds and Drawbacks	..	1,584	1,455	405	4,927	5,709	14,080	..	334	1,039
II. Forests	..	..	..	..	..	..	..	..	..	..
A. Conservancy and Works.										
I. Timber and other produce removed from the forests by Government Agency—										
(a) Timber	..	49,735	..	5,598	31	..	55,364	..	..	..
(b) Firewood and charcoal ..	..	23	..	441	99	..	563	..	..	31
(c) Bamboos	..	..	..	..	..	..	..	..	..	..
(d) Sandalwood	..	..	..	..	..	..	..	..	..	..
(e) Grass and other minor produce.	..	..	17	120	40	..	177	..	..	10
II. Timber and other produce removed from the forests by consumers or purchasers.	..	5,962	4,858	3,505	13,507	1,426	29,258	..	1,774	2,519
III. Confiscated drift and waifwood ..	..	115	..	6	823	..	944	..	..	9
IV. Forests not managed by Government—										
(a) Shared and private forests.	..	..	..	..	..	..	..	..	..	..
V. Rent of leased forests and payments to shareholders in forest managed by Government.	..	..	478	..	..	..	478	..	..	..
VI. Live-stock, stores, tools and plant—										
(a) Purchase of cattle	..	..	..	..	..	..	..	..	..	..
(b) Feed and keep of cattle ..	..	9	..	1,874	..	..	1,883	..	..	..
(c) Stores, tools and plant ..	11,564	421	384	1,352	7,093	2,470	23,234	..	243	53
VII. Communications and buildings—										
(a) Roads and bridges	13	6,250	2,143	2,420	1,796	1,729	14,351	..	..	408
(b) Buildings	75	59,753	3,653	4,981	7,512	3,296	79,270	..	1,399	4,448
(c) Other works	..	83	88	..	..	195	366	..	699	40
VIII. Demarcation, improvement and extension of forests—										
(a) Demarcation	..	174	148	1,103	281	366	2,067	..	1,715	1,118
(b) Cost of forest settlement compensation for land and rights.	..	1,967	27	..	..	..	1,994	..	2,344	..
(c) Surveys—										
(1) Local	..	65	510	1,619	1,050	1,137	4,381	..	149	..
(2) India	..	..	..	..	..	..	..	..	..	..
(d) Working-plans	..	..	..	..	..	..	..	..	..	..
(e) Sowing and planting ..	302	663	37	348	131	592	2,073	..	25	192
(f) Protection from fire ..	..	4,933	548	10,156	4,197	1,061	20,895	..	1,303	640
(g) Other works	..	3,189	240	414	..	4,122	7,965	..	1,676	4,229
IX. Miscellaneous—										
(a) Law charges	..	..	..	..	1	..	1	..	608	..
(b) Grain compensation allowance.	..	..	..	..	..	..	..	..	..	..
(c) Local allowance for high prices.	..	— 523	— 431	— 306	— 886	— 314	— 2,460	..	— 134	— 371
(d) Other charges	14	835	26	5	1	86	967	..	..	..
Total, A. Conservancy and Works ..	11,968	1,33,654	12,671	33,636	35,676	16,166	2,43,771	..	11,801	13,326
B. Establishments.										
I. Salaries—										
(a) Conservators	14,731	..	..	..	..	..	14,731	..	..	..
(b) Superior officers	3,166	14,996	7,247	2,575	9,572	4,571	42,127	..	3,525	8,401
(c) Subordinate forest and depot establishments.	859	37,757	14,878	21,023	23,781	14,316	1,12,614	..	26,678	27,342
(d) Office establishments	7,177	9,970	4,793	6,626	8,390	4,284	41,240	..	6,642	6,138
(e) Deputation and special allowances.	..	3,143	..	5,794	144	..	9,081	..	..	..
(f) Grain compensation allowance ..	..	..	..	..	..	..	..	..	..	..
(g) Local allowance for high prices.	— 154	— 1,487	— 624	— 891	— 947	— 505	— 4,608	..	—1,084	—1,051
II. Travelling allowances—										
(a) Conservators	660	700	..	..	..	78	1,438	..	389	..
(b) Superior officers	706	5,634	1,733	1,048	1,367	1,568	12,056	..	522	1,436
(c) Subordinate forest and depot establishments.	917	8,042	3,269	5,868	4,640	3,638	26,374	..	4,155	5,349
(d) Office establishments	1,192	2,393	1,811	2,070	2,095	1,092	10,153	..	1,191	1,390
III. Contingencies—										
(a) Contract items—										
(1) Service postage and telegram charges.	520	979	555	691	763	886	4,394	..	389	536
(2) Other contract contingencies.	1,504	1,567	1,139	1,064	2,002	913	8,129	..	1,740	1,557
(b) Non-Contract items—										
(1) Rents, rates and taxes ..	455	126	35	166	182	118	1,076	..	281	80
(2) Sundries	..	144	..	83	..	29	256	..	3	21
Total, B. Establishments ..	31,733	83,904	34,336	46,111	51,989	30,988	2,79,061	..	44,381	51,199
Grand Total of Expenditure, A and B ..	43,701	2,17,558	47,007	79,747	87,665	47,154	5,22,832	..	56,182	64,525

Summary of expenditure of the different districts for the Forest year 1920–21—*cont.*

Circle.					Third Circle.								
Guntur.	Kurnool, East.	Kurnool, South.	Kurnool, West.	Total.	Direction.	Cuddapah, North.	Cuddapah, South.	Cuddapah, West.	Nellore.	Chingleput.	Chittoor.	Vellore, North.	Total.
Rs. 4,561	Rs. 3,051	Rs. 2,921	Rs. 16,076	Rs. 27,982	Rs. ..	Rs. 474	Rs. 1,995	Rs. 6,149	Rs. 6,698	Rs. 554	Rs. 5,762	Rs. 3,876	Rs. 25,508
..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	2,053	51	3,700	5,804	..	..	37	..	9	..	12	..	58
93	904	..	7,223	8,251	..	..	129	..	363	89	36	3	620
..	2,263	..	3,746	6,009	..	..	..	..	..	..	..	52	52
..	..	..	..	..	..	..	77	..	..	..	161	61	299
..	3,165	2	755	3,932	..	..	..	..	5,606	..	45	41	5,692
3,841	4,886	3,838	8,984	25,842	..	3,113	3,895	5,000	2,697	1,001	5,675	1,838	23,219
..	..	176	24	209	..	..	1	12	— 18	..	9	..	4
..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	250	250	..	..	..	..	..	..	..	..	..
..	..	..	3,273	3,273	..	..	..	..	..	9	..	..	9
352	606	452	585	2,291	..	630	2,820	447	2,352	28	328	452	7,057
1,197	2,942	5,392	2,603	12,542	..	1,765	7,395	2,721	335	2,368	4,562	581	19,727
2,513	4,260	3,438	7,321	23,379	..	2,070	5,926	2,780	3,770	1,713	7,199	2,496	25,954
558	268	386	634	2,585	..	571	505	166	463	641	211	68	2,625
65	156	106	492	3,652	..	..	..	30	1,274	1,389	1,046	91	3,830
..	..	..	..	2,344	..	892	565	205	767	..	437	..	2,866
..	540	..	219	908	443	..	..	..	472	..	..	437	1,352
..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	126	..	126
48	386	151	1,936	2,738	..	1	225	139	14	52	2,394	1,903	4,723
..	3,248	8,016	4,870	18,077	..	5,916	3,710	4,091	1,249	1,436	3,630	487	20,519
8,094	1,260	8	496	15,763	..	..	2,447	3,527	3,431	10,674	11,319	6,691	38,088
..	..	10	..	618	..	..	7	..	..	..	7	8	22
..	..	..	..	..	..	..	..	..	..	..	..	..	..
— 640	— 248	— 133	— 449	— 1,975	— 20	— 118	— 118	— 176	— 76	— 184	— 358	— 464	— 1,514
76	188	1	595	860	13	115	26	200	— 156	..	254	175	627
16,197	26,877	21,894	47,267	1,37,352	436	14,955	27,647	19,142	22,552	19,216	37,093	14,920	1,55,961
..	..	..	..	..	9,912	..	..	..	..	..	..	..	9,912
7,125	3,982	5,275	3,174	31,482	10,630	2,160	8,319	3,363	11,154	3,862	5,850	3,696	49,034
28,720	22,062	28,386	33,584	1,66,772	..	24,699	29,968	25,992	37,186	23,424	40,219	17,934	1,99,422
6,434	6,462	7,454	10,790	43,920	7,428	5,758	6,561	7,180	6,814	4,828	6,663	4,767	49,999
..	1,224	2,436	3,440	7,100	..	83	..	..	304	..	14	..	401
..	..	..	..	..	..	..	..	..	19	..	..	— 881	— 862
— 797	— 899	— 947	— 1,113	— 5,893	— 269	— 1,037	— 988	— 1,269	— 1,020	— 973	— 1,331	273	— 6,614
..	..	..	150	489	1,822	..	139	..	..	..	246	44	2,251
952	1,185	1,455	1,205	6,755	207	837	1,598	666	1,695	1,275	1,525	1,317	+ 9,120
4,793	4,597	5,665	7,559	32,118	..	4,752	5,398	4,586	5,855	3,383	5,933	3,713	33,620
940	1,668	2,286	3,001	10,476	790	756	1,430	1,087	1,195	665	2,624	815	9,362
605	766	653	584	3,533	471	278	380	376	743	296	617	424	3,585
1,067	1,399	1,603	1,739	9,105	506	1,239	882	968	1,348	747	1,244	636	7,569
90	202	48	155	856	..	30	55	106	124	465	111	148	1,039
54	26	175	791	1,070	..	181	26	303	13	..	2	58	583
49,983	42,374	54,487	65,059	3,07,783	31,497	39,736	53,768	43,358	65,430	37,972	63,717	32,943	3,68,421
66,180	69,551	76,381	112,316	445,135	31,933	54,691	81,415	62,500	87,982	57,188	100,810	47,863	5,24,3 82

Summary of expenditure of the different districts for the Forest year 1920-21—*cont.*

Budget heads.	Fourth Circle.									Fifth	
	Direction.	Forest Engineer.	Vellore, South.	Vellore, West.	Salem, East.	Salem, North.	Salem, Central.	Salem, South.	Total.	Direction.	Kollegal.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
I. Refunds and Drawbacks ..	..	..	8,986	5,211	2,498	397	1,400	4,668	23,160	..	45
II. Forests	..	..	..	..	..	..	..	..	..	..	..
A. Conservancy and Works.											
I. Timber and other produce removed from the forests by Government Agency—											
(*a*) Timber	..	..	8	381	..	89	..	8	486	..	..
(*b*) Firewood and charcoal.	..	..	..	530	6	60	..	..	596	..	..
(*c*) Bamboos	..	..	..	..	..	115	..	..	115	..	..
(*d*) Sandalwood	..	..	4,484	4,598	1,066	7,810	816	1,028	19,802	190	2,330
(*e*) Grass and other minor produce.	..	..	..	1	245	84	14	..	344	..	81
II. Timber and other produce removed from the forests by consumers or purchasers.	..	..	1,232	1,184	1,299	1,032	2,019	2,062	8,828	..	2,633
III. Confiscated, drift and waif-wood.	..	..	..	..	8	..	1	30	39	..	..
IV. Forests not managed by Government.											
(*a*) Shared and private forests.	..	..	..	..	..	..	..	..	..	..	..
V. Rent of leased forests and payments to shareholders in forests managed by Government.	..	..	..	..	..	38	..	..	38	..	..
VI. Live-stock, stores, tools and plant—											
(*a*) Purchase of cattle ..	..	..	..	..	12	..	..	..	12	..	..
(*b*) Feed and keep of cattle.	..	..	..	..	16	..	..	..	16	80	..
(*c*) Stores, tools and plant.	..	15	245	164	27	958	278	50	1,782*	1,863	107
VII. Communications and buildings—											
(*a*) Roads and bridges ..	..	1,40,337	281	596	57	220	271	968	1,42,730	— 11	3,630
(*b*) Buildings	..	..	2,131	2,315	961	1,662	1,706	2,468	11,242	..	2,695
(*c*) Other works	..	..	151	816	29	..	14	413	1,423	— 11	225
VIII. Demarcation, improvement and extension of forests—											
(*a*) Demarcation	..	..	41	120	33	..	53	231	478	..	676
(*b*) Cost of Forest Settlement; compensation for land and rights.	..	..	..	..	..	—20,000	..	897	—19,103	..	..
(*c*) Surveys .. { Local ..	..	..	..	455	463	13	1	1,413	2,355	..	6
{ India ..	..	..	..	..	..	..	..	..	..	..	..
(*d*) Working-plans ..	..	..	..	..	18	..	..	..	18	160	35
(*e*) Sowing and planting..	..	..	621	91	373	1,151	295	13	2,545	28	186
(*f*) Protection from fire ..	..	..	742	69	980	1,023	994	361	4,169	..	3,178
(*g*) Other works	..	..	3,872	4,210	4,813	4,818	5,598	2,144	25,455	..	469
IX. Miscellaneous—											
(*a*) Law charges	..	..	..	12	1	..	..	17	30	..	..
(*b*) Grain compensation allowance.	..	..	..	..	..	..	..	— 374	— 374	..	..
(*c*) Local allowance for high prices.	..	..	—281	—499	— 97	— 449	— 714	— 75	— 2,115	— 17	— 154
(*d*) Other charges ..	..	..	160	10	..	95	78	67	410	288	18
Total, A. Conservancy and Works ..	..	1,40,352	13,687	15,063	10,810	— 1,286	11,424	11,721	2,01,271	2,570	16,115
B. Establishments.											
I. Salaries—											
(*a*) Conservators	31,171	..	..	..	..	..	..	..	31,171	39,263	..
(*b*) Superior officers	606	3,838	5,627	5,599	3,910	15,573	4,279	4,900	44,332	3,766	2,802
(*c*) Subordinate Forest and Depot establishments.	..	3,608	19,060	20,893	23,851	21,478	17,111	25,994	1,31,995	475	17,178
(*d*) Office establishments ..	7,708	1,812	6,162	6,974	5,737	6,978	7,348	7,864	50,583	6,939	4,967
(*e*) Deputation and special allowances.	..	884	..	80	..	70	..	587	1,621	..	915
(*f*) Grain compensation allowance.	..	..	..	5	..	..	..	..	5	..	..
(*g*) Local allowance for high prices.	—226	194	—703	—2,806	— 685	— 1,240	— 993	—2,513	— 8,972	— 170	— 693
II. Travelling allowances—											
(*a*) Conservators	706	..	..	..	..	..	..	..	706	2,523	..
(*b*) Superior officers	..	482	1,175	1,087	1,398	780	984	1,837	7,743	457	1,512
(*c*) Subordinate forest and depot establishments.	..	794	2,829	4,044	3,031	4,377	2,806	4,039	21,920	304	2,816
(*d*) Office establishments ..	378	404	749	829	984	776	557	1,408	6,080	845	804
III. Contingencies—											
(*a*) Contract items—											
(1) Service postage and telegram charges.	430	..	726	503	674	829	345	801	4,308	793	372
(2) Sundries or other contract contingencies.	995	..	1,095	839	1,437	852	1,190	1,250	7,658	1,599	1,542
(*b*) Non-contract items—											
(1) Rents, rates and taxes.	..	338	235	101	460	48	57	22	1,261	65	451
(2) Sundries	..	392	*86	114	79	5	1	..	677	25	14
Total, B. Establishments ..	41,763	12,746	37,041	38,262	40,876	50,526	33,685	46,189	3,01,088	56,884	32,680
Grand Total of Expenditure, A and B.	41,763	1,53,098	50,728	53,325	51,186	49,240	45,109	57,910	5,02,359	59,454	48,795

* Includes Rs. 792 relating to Sixth Circle.

Summary of expenditure of the different districts for the Forest year 1920–21—*cont.*

Circle.						Sixth Circle.								
North Coimbatore.	South Coimbatore.	Madura.	Tinnevelly.	Forest Engineer.	Total.	Direction.	North Mangalore.	South Mangalore.	North Malabar.	South Malabar.	The Nilgiris.	Central Coimbatore.	Forest Research Officer.	Total.
Rs. 785	Rs. 288	Rs. 3,962	Rs. 1,098	Rs. ..	Rs. 6,178	Rs. ..	Rs. 10	Rs. 49	Rs. 174	Rs. 254	Rs. 542	Rs. 963	Rs. ..	Rs. 1,992
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
47	26,534	550	10	..	27,141	..	4,946	12,051	3,002	88,228	3,197	33,727	..	1,45,151
..	..	..	— 8	..	— 8	..	767	2,691	..	..	16,667	207	..	20,332
..	..	..	..	..	..	..	..	350	..	27,568	..	40	..	27,958
10,754	..	..	260	..	13,534	..	31	260	..	..	116	13	..	420
20	5	..	..	..	106	..	— 355	— 656	98	5	105	..	..	— 803
3,857	1,313	3,241	3,543	..	14,587	..	2,775	2,155	554	1,631	..	2,780	..	9,895
2	15	6	..	..	23	..	52	..	..	..	..	18	..	70
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	1,250	..	..	..	1,250	..	..	..	70	2,093	..	..	..	2,163
..	3,353	..	750	..	4,103	..	..	282	1,748	829	1,277	265	..	4,401
..	30,620	..	12	..	30,712	..	..	8,588	13,409	54,279	34,794	8,362	..	1,19,432
747	2,488	693	567	20	6,485	..	118	1,291	1,748	5,379	722	16,105	557	25,920
12,653	6,359	8,828	2,709	1,704	35,872	..	1,838	1,173	2,557	2,603	3,868	56,689	..	68,728
3,395	6,233	5,296	2,763	..	20,382	..	2,191	1,057	3,136	7,800	629	11,830	..	26,643
40	215	396	10	..	875	— 15	87	73	526	382	341	1,909	..	3,303
3	16	415	97	..	1,207	..	52	115	1,041	707	703	390	..	3,008
..	..	54	..	..	54	..	..	..	531	..	..	115	..	646
217	..	..	..	..	223	..	..	..	..	4	1,382	1,009	..	2,395
..	..	..	..	..	..	..	..	..	..	..	..	..	..	.. cl
..	..	230	49	..	474	..	..	..	..	..	..	847	..	847
832	447	2,839	848	..	5,180	..	1,317	2,560	1,421	17,878	940	2,163	— 114	26,166
3,402	1,309	5,137	4,419	..	17,445	..	2,855	1,212	5,352	3,984	4,314	4,699	..	22,416
5,417	4,488	9,058	2,784	..	22,216	..	..	376	3,664	1,124	1,829	4,467	..	11,460
..	..	..	7	..	7	..	5	..	52	..	1	..	..	58
..	..	..	—1,033	..	— 1,033	..	..	..	..	..	..	..	..	..
— 406	— 463	— 731	485	..	— 1,291	..	— 284	— 455	— 345	— 344	— 801	— 292	..	— 2,521
634	2,319	12	211	..	3,482	..	128	575	338	225	6,040	924	1,782	10,012
41,614	86,496	36,024	18,483	1,724	*2,03,026	— 15	16,523	33,698	38,902	2,14,375	76,124	1,46,267	2,225	5,28,099
..	..	..	..	..	32,263	1,750	..	..	..	..	..	..	2,530	4,280
14,400	17,488	4,321	7,301	3,838	53,916	..	2,514	4,669	5,251	8,603	8,469	11,339	7,345	48,190
22,477	18,878	32,778	26,774	3,608	1,22,168	80	19,689	16,727	13,910	16,825	22,400	27,636	3,472	1,20,739
6,373	7,535	7,501	7,432	1,812	42,559	284	5,350	5,627	5,674	7,309	7,102	6,971	1,387	39,704
307	4,639	510	..	884	7,256	15	..	..	8,587	179	8,048	61	10	16,900
..	..	..	..	380	380	..	..	..	1	— 36	..	..	..	— 35
— 856	— 564	—1,021	—1,120	— 186	— 4,610	..	— 655	— 547	— 534	— 634	— 728	— 497	— 72	— 3,667
..	..	..	..	..	2,523	620	100	..	239	..	..	..	..	959
1,353	1,477	1,809	923	482	8,013	..	1,020	906	2,333	1,980	2,197	2,954	1,787	13,177
5,016	4,115	6,361	4,141	794	23,547	..	3,549	3,441	2,492	3,926	3,464	6,302	1,202	24,376
1,624	1,072	2,016	898	404	7,663	244	708	948	709	970	1,060	1,833	564	7,036
895	981	1,939	1,459	..	12,357	51	770	977	475	691	798	464	161	4,387
1,362	1,415					17	1,454	906	755	1,381	1,049	1,275	1,104	7,941
20	435	293	230	309	2,886	..	5	..	..	..	136	105	..	246
..	634			410		14	..	80	56	142	1,063	7	274	1,636
52,971	58,105	56,507	48,038	12,735	3,17,920	3,075	34,504	33,734	39,948	41,336	55,058	58,460	19,764	2,85,869
94,585	1,44,601	92,531	66,521	14,459	5,20,946	3,060	51,027	67,432	78,850	2,55,711	1,31,182	2,04,717	21,989	8,13,968

* Includes Rs. 792 relating to Sixth Circle.

Summary of receipts and expenditure during 1920-21 for each circle and for the Presidency compiled in the Chief Conservator's office from Conservators' statements.

Budget heads.	First Circle.	Second Circle.	Third Circle.	Fourth Circle.	Fifth Circle.	Sixth Circle.	Grand total, Presidency.	
							1920-21.	1919-20.
RECEIPTS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
I. Timber and other produce removed from the forests by Government agency—								
(a) Timber	28,826	14,868	682	1,205	82,591	4,50,567	5,78,739	9,94 897
(b) Firewood and charcoal ..	4,377	3,235	4,440	315	317	43,313	55,997	88,117
(c) Bamboos	—	12,668	42	380	9	7,314	20,413	41,490
(d) Sandalwood	..	..	9	3,56,131	3,74,127	5,964	7,36,231	7,46,581
(e) Grass and other minor produce.	49	5,417	47,163	7,229	95	4,606	64,462	1,20,579
Total, I ..	33,252	36,188	52,339	3,65,260	4,57,139	5,11,664	14,55,842	19,91,664
II. Timber and other produce removed from the forests by consumers or purchasers—								
(a) Timber	46,202	27,164	49,167	37,915	49,767	71,781	2,81,996	2,89,764
(b) Firewood and charcoal ..	1,00,910	56,844	74,233	1,68,372	1,87,661	72,950	6,60,970	7,60,621
(c) Bamboos	1,09,817	41,301	11,366	69,279	18,748	50,815	2,61,326	2,98,055
(d) Grazing and fodder grass..	46,856	2,52,612	2,02,183	1,64,534	1,10,389	40,615	8,16,589	8,53,555
(e) Other produce	41,721	2,38,242	1,16,831	1,16,960	87,065	27,747	6,28,566	11,69,625
(f) Tree-owners' fees	19,416	49,603	26,286	6,499	76	1,196	1,03,076	1,43,495
(g) Other items	..	..	..	— 280	..	..	— 280	2,280
(h) Commutation fees	..	..	..	900	..	..	900	2,165
Total, II ..	3,64,922	6,65,766	4,80,066	5,64,179	4,53,706	2,24,504	27,53,143	35,19,560
III. Confiscated drift and waifwood ..	3,056	2,647	2,267	1,123	1,094	1,285	11,472	19,750
IV. Revenue from forests not managed by Government.	..	..	..	..	..	..	..	..
V. Miscellaneous—								
(a) Fines and forfeitures ..	13,531	55,575	63,013	47,961	21,658	15,928	2,17,666	2,52,068
(b) Other sources	10,794	4,564	9,386	— 4,776	74,803	83,290	1,78,061	1,70,868
Total, V ..	24,325	60,139	72,399	43,185	96,461	99,218	3,95,727	4,22,936
Grand Total, Receipts ..	4,25,555	7,64,740	6,07,071	9,73,747	10,08,400	8,56,671	46,16,184	59,53,910
EXPENDITURE.								
I. Refunds and Drawbacks	14,080	27,982	25,508	23,160	6,178	1,992	98,900	53,215
A. Conservancy and Works.								
I. Timber and other produce removed from the forests by Government agency—								
(a) Timber	55,364	5,804	58	486	27,141	1,45,151	2,34,004	1,67,999
(b) Firewood and charcoal ..	563	8,251	620	596	— 8	20,332	30,354	47,009
(c) Bamboos	..	6,009	52	115	..	27,958	34,134	44,423
(d) Sandalwood	..	..	299	19,802	13,534	420	34,055	39,407
(e) Grass and other minor produce.	177	3,932	5,692	344	106	— 803	9,448	34,962
Total, *A*-I ..	56,104	23,996	6,721	21,343	40,773	1,93,058	3,41,995	3,33,800
II. Timber and other produce removed from the forests by consumers or purchasers.	29,258	25,842	23,219	8,828	14,587	9,895	1,11,629	1,37,359
III. Confiscated drift and waifwood ..	944	209	4	39	23	70	1,289	1,450
IV. Forests not managed by Government.	..	..	..	..	..	..	..	..
V. Rent of leased forests by payments to shareholders in forests managed by Government.	478	..	..	38	1,250	2,163	3,929	4,601
VI. Live-stock, stores, tools and plant—								
(a) Purchase of cattle ..	..	250	..	12	4,103	4,401	8,766	29,318
(b) Feed and keep of cattle ..	1,883	3,273	9	16	30,712	1,19,432	1,55,325	1,50,365
(c) Stores, tools and plant ..	23,234	2,291	7,057	1,732	6,485	25,920	66,719	58,432
Total, *A*-VI ..	25,117	5,814	7,066	1,760	41,300	1,49,753	2,30,810	2,38,115
VII. Communications and buildings—								
(a) Roads and bridges ..	14,351	12,542	19,727	1,42,730	35,872	68,728	2,93,990	2,33,205
(b) Buildings	79,270	23,379	25,954	11,242	20,382	26,643	1,86,870	1,57,875
(c) Other works	366	2,585	2,625	1,423	875	3,303	11,177	14,844
Total, *A*-VII ..	93,987	38,506	48,306	1,55,395	57,129	98,674	4,91,997	4,05,924

Summary of receipts and expenditure during 1919-20 for each circle and for the Presidency compiled in the Chief Conservator's office from the Conservators' statements—*cont.*

Budget heads.	First Circle.	Second Circle.	Third Circle.	Fourth Circle.	Fifth Circle.	Sixth Circle.	Grand total, Presidency.	
							1920-21.	1919-20.
EXPENDITURE—*cont.*	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
A. Conservancy and Works—cont.								
VIII. Demarcation, etc.—								
(*a*) Demarcation	2,067	3,652	3,830	478	1,207	3,008	14,242	18,115
(*b*) Cost of forest settlement.	1,994	2,844	2,866	— 19,103	54	646	— 11,199	37,537
(*c*) Surveys. (1) Local ..	4,381	908	1,352	2,355	223	2,395	11,614	14,418
(2) India ..	..	..	..	..	..	..	..	— 79
(*d*) Working-plans	..	..	126	18	474	847	1,465	2,350
(*e*) Sowing and planting ..	2,073	2,738	4,728	2,545	5,180	26,165	43,429	46,116
(*f*) Protection from fire ..	20,895	18,077	20,519	4,169	17,445	22,416	1,03,521	1,14,954
(*g*) Other works	7,965	15,763	38,089	25,455	22,216	11,460	1,20,948	1,28,072
Total, A-VIII ..	39,375	43,482	71,510	15,917	46,799	66,937	2,84,020	3,61,483
IX. Miscellaneous—								
(*a*) Law charges	1	618	22	30	7	58	736	99
(*b*) Grain compensation ..	..	..	..	— 374	— 1,033	..	— 1,407	6
(*c*) Local allowance for high prices.	— 2,460	— 1,975	— 1,514	— 2,115	— 1,291	— 2,521	— 11,876	94,952
(*d*) Other charges	967	860	627	410	3,482	10,012	16,358	21,747
Total, A-IX ..	— 1,492	— 497	— 865	— 2,049	1,165	7,549	3,811	1,16,804
Total, A. Conservancy and Works including refunds and drawbacks.	2,57 851	1,65,334	1,81,469	2,24,431	2,09,204	5,30,091	15,68,380	10,23,271
B. Establishment.								
I. Salaries—								
(*a*) Conservators	14,731	..	9,912	31,171	39,263	4,280	99,357	1,17,330
(*b*) Superior officers	42,127	31,482	49,034	44,332	53,916	48,190	2,69,081	3,31,274
(*c*) Subordinate Forest and Depot establishment.	1,12,614	1,66,772	1,99,422	1,31,995	1,22,168	1,20,739	8,53,710	6,30,340
(*d*) Office establishment ..	41,240	43,920	49,999	50,583	42,559	39,704	2,68,005	2,22,969
(*e*) Deputation and special allowances.	9,081	7,100	401	1,621	7,255	16,900	42,358	16,536
(*f*) Grain compensation allowance.	..	..	— 862	5	380	— 35	— 512	63
(*g*) Local allowance for high prices.	— 4,608	— 5,893	— 6,614	— 8,972	— 4,610	— 3,667	— 34,364	1,06,691
Total, B-I ..	2,15,185	2,43,381	3,01,292	2,50,735	2,60,931	2,26,111	14,97,635	15,25,203
II. Travelling allowance—								
(*a*) Conservators	1,438	489	2,251	706	2,523	959	8,366	10,958
(*b*) Superior officers	1,205	6,755	9,120	7,743	8,013	13,177	56,864	71,040
(*c*) Subordinate Forest and Depot establishments.	26,374	32,118	33,620	21,920	23,547	24,376	1,61,955	1,74,057
(*d*) Office establishment ..	10,153	10,476	9,362	6,080	7,663	7,036	50,770	58,033
Total B-II ..	50,021	49,838	5,21,353	36,449	41,746	45,548	2,77,955	3,14,088
III. Contingencies—								
(*a*) Contract items—								
(1) Service postage and telegrams.	4,394	3,533	3,585	4,308	12,357	4,387	66,966	33,646
(2) Sundries	8,129	9,105	1,569	7,658		7,941		58,165
(*b*) Non-contract items—								
(1) Rents, rates and taxes.	1,076	856	1,039	1,261	2,886	246	11,586	7,498
(2) Sundries	256	1,070	583	677		1,636		7,792
Total, B-III ..	13,855	14,564	6,776	13,904	15,243	14,210	78,552	1,07,081
Total, B. Establishment ..	2,79,061	3,07,783	3,62,421	3,01,088	3,17,920	2,85,869	18,54,142	19,46,372
Grand Total, A and B :—Expenditure including refunds and drawbacks.	5,36,912	4,73,117	5,49,890	5,25,519	5,27,124	8,15,960	34,28,522	35,69,643
Surplus ..	—1,11,357	2,91,623	57,181	4,48,228	4,81,276	20,711	11,87,662	23,84,267
Total ..	4,25,555	7,64,740	6,07,071	9,73,747	10,08,400	8,36,671	46,16,184	59,53,910

ANNUAL FORM No. 81.

Forest Department, Madras Presidency.

Outstandings and liabilities on account of contractors and disbursers for the period from 1st July 1920 to 31st March 1921.

District.	Department debtor.			Department creditor.			Balance due.	
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To department (outstandings).	By department (liabilities).
First Circle.		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	
Chief Conservator's Office ..	..	65 0 11	865 0 11	865 0 11	..	865 0 11	..	..
Direction	..	814 11 9	814 11 9	87 2 7	750 2 7	837 5 2	22 9 5	..
Ganjam	..	1,95,531 4 7	1,95,531 4 7	5,116 11 4	1,92,272 5 6	1,97,389 0 10	1,857 12 8	..
Vizagapatam	..	36,777 12 10	36,777 12 10	902 3 1	36,221 15 3	37,124 2 4	346 5 6	..
Godavari, Upper	..	72,584 1 7	72,584 1 7	897 8 0	71,878 7 4	72,775 15 4	191 13 9	..
Do. Lower	..	70,581 12 11	70,581 12 11	1,011 10 10	70,543 15 10	71,555 10 8	973 13 9	..
Kistna	..	39,795 0 4	39,795 0 4	2,104 14 6	38,358 1 8	40,463 0 2	667 15 10	..
Total ..	..	4,16,084 12 0	4,16,084 12 0	10,120 2 4	4,10,025 0 2	4,20,145 2 6	4,060 6 6	..
Second Circle.								
Direction	..	..	..	..	..	..	..	..
Kurnool, East	..	67,787 14 4	67,787 14 4	2,801 15 10	66,064 13 5	68,866 13 3	1,078 14 11	..
Do. South	..	71,588 6 6	71,588 6 6	950 6 11	70,967 12 9	71,918 3 8	329 13 2	..
Do. West	..	1,01,622 10 5	1,01,622 10 5	3,403 5 2	99,174 9 11	1,02,577 15 1	955 4 8	..
Guntur	..	55,518 12 7	55,518 12 7	683 6 0	55,275 8 1	55,958 14 1	440 1 6	..
Bellary	..	43,753 7 3	43,753 7 3	450 11 8	43,364 14 11	43,815 10 2	62 2 11	..
Anantapur	..	52,242 13 9	52,242 13 9	434 2 2	52,091 11 8	52,525 13 10	283 0 1	..
Total ..	..	3,92,514 0 10	3,92,514 0 10	8,723 15 4	3,86,939 6 9	3,95,663 6 1	3,149 5 3	..
Third Circle.								
Direction	..	789 15 8	789 15 8	37 4 3	778 11 1	815 15 4	25 15 8	..
Vellore, North .. .	..	39,016 7 1	39,016 7 1	709 3 2	38,699 4 8	39,408 7 10	392 0 9	..
Nellore	..	71,157 7 7	71,157 7 7	1,587 14 5	69,579 6 11	71,167 5 4	9 13 9	..
Cuddapah, North	..	54,135 7 4	54,135 7 4	1,589 12 2	52,576 9 6	54,166 5 8	30 14 4	..
Do. South	..	67,309 2 11	67,309 2 11	2,014 2 0	65,752 7 11	67,766 9 11	457 7 0	..
Do. West	..	61,418 1 11	61,418 1 11	1 346 5 7	60,406 4 8	61,752 10 3	334 8 4	..
Chittoor	..	98,570 2 11	98,570 2 11	3,271 10 10	98,831 0 3	1,02,102 11 1	3,532 8 2	..
Chingleput	..	45,215 14 3	45,215 14 3	859 8 8	44,996 13 7	45,836 6 3	620 8 0	..
Total ..	..	4,37,612 11 8	4,37,612 11 8	11,395 13 1	4,31,629 10 7	4,43,016 7 8	5,403 12 0	..
Fourth Circle.								
Direction	..	729 7 6	729 7 6	13 15 1	753 7 6	767 6 7	37 15 1	..
Forest Engineer's Office, Salem	..	13,115 14 9	13,115 14 9	1,178 14 8	13,139 11 3	14,318 9 11	1,202 11 2	..
Vellore, South	..	38,896 14 10	38,896 14 10	402 9 0	39,092 8 5	39,495 1 5	598 2 7	..
Do. West	..	42,969 1 3	42,969 1 3	1,139 4 0	42,123 3 1	43,262 7 1	293 5 10	..
Salem, East	..	42,198 14 11	42,193 14 11	269 11 2	43,449 0 5	43,718 11 7	1,524 12 8	..
Do. North	..	59,630 5 8	59,630 5 8	1,718 0 1	58,179 2 2	59,897 2 3	266 12 7	..
Do. Central	..	37,689 7 4	37,689 7 4	2,102 2 1	36,253 12 7	38,355 14 8	666 7 4	..
Do. South	..	53,308 9 10	53,308 9 10	1,668 8 3	52,576 3 1	54,244 11 4	936 1 6	..
Total ..	..	2,88,533 12 1	2,88,533 12 1	8,493 0 4	2,85,567 0 6	2,94,060 0 10	5,526 4 9	..
Fifth Circle.								
Direction	..	2,881 12 10	2,881 12 10	1,865 15 3	1,023 1 4	2,889 0 7	7 3 9	..
Madura	..	95,337 6 5	95,337 6 5	2,393 12 10	93,699 4 5	96,093 1 3	755 10 10	..
Tinnevelly cum Ramnad ..	..	68,382 7 4	68,382 7 4	2,614 11 8	68,757 6 10	71,372 2 6	2,989 11 2	..
Coimbatore, North	..	92,772 4 9	92,772 4 9	3,236 12 4	90,019 6 10	93,256 3 2	483 14 5	..
Do. South	..	1,27,704 11 10	1,27,704 11 10	4,013 3 7	1,24,256 4 4	1,28,269 7 11	564 12 1	..
Kollegal	..	47,578 12 5	47,578 12 5	1,317 11 7	46,594 5 7	47,912 1 2	333 4 9	..
Total ..	..	4,34,657 7 7	4,34,657 7 7	15,442 3 3	4,24,349 13 4	4,39,792 0 7	5,134 9 0	..
Sixth Circle.								
Direction	..	52 4 6	52 4 6	..	12,610 8 0	12,610 8 0	12,558 3 6	..
The Nilgiris	..	94,048 5 3	94,048 5 3	4,637 7 11	90,576 2 2	95,213 10 1	1,165 4 10	..
Malabar, North	..	64,890 4 9	64,890 4 9	1,050 8 0	64,337 3 2	65,387 11 2	497 6 5	..
Do. South	..	1,83,105 2 4	1,83,105 2 4	14,146 5 2	1,75,078 9 11	1,89,224 15 1	6,119 12 9	..
Mangalore, North	..	52,020 0 3	52,020 0 3	955 5 0	51,250 2 4	52,205 7 10	185 7 7	..
Do. South	..	66,068 14 3	66,068 14 3	3,025 11 0	64,442 6 6	67,468 1 6	1,399 3 3	..
Coimbatore, Central	..	1,82,317 11 3	1,82,317 11 3	12,390 1 2	1,73,324 7 3	1,85,714 8 5	3,396 13 2	..
Forest Research office ..	..	6,923 2 9	6,923 2 9	172 4 1	7,780 9 7	7,952 13 8	1,029 10 11	..
Total ..	..	6,49,425 13 4	6,49,425 13 4	36,377 10 10	6,39,400 0 11	6,75,777 11 9	26,351 14 5	..
Grand total, Presidency ..	..	26,18,893 10 8	26,19,693 10 5	91,417 14 1	25,77,902 0 3	26,69,319 14 4	49,626 3 11	..

ACCOUNTANT-GENERAL'S OFFICE,
MADRAS, 1st *September* 1920.

G. H. BAILEY,
Deputy Accountant-General.

ANNUAL FORM No. 82.

Forest Department, Madras Presidency.

Revenue received and outstandings on account of revenue during 1920-21.

District.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realized during year.	Balance due to the department at end of year.
		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
First Circle.	Timber and other forest produce ..	..	1,361 0 0	1,361 0 0	1,361 0 0	..
Direction	Do.	7,168 9 7	78,864 4 11	86,032 14 6	82,137 0 0 (a) 797 12 0	3,098 2 6
Ganjam	Do.	19,341 6 0	28,986 4 8	48,327 10 8	36,237 0 0	12,090 10 8
Vizagapatam	Do.	2,617 10 0	41,918 14 3	44,536 8 3	44,256 0 0 (a) 5 10 0	274 14 3
Godavari, Upper	Do.	68,072 12 0	1,43,483 8 0	2,11,556 4 0	2,06,253 0 0	5,303 4 0
Do. Lower	Do.	8,823 4 6	47,960 9 10	56,783 14 4	55,311 0 0 (a) 93 12 0	1,379 2 4
Kistna	Total ..	1,06,023 10 1	3,42,574 9 8	4,48,598 3 9	4,25,555 0 0 (a) 897 2 0	22,146 1 9
Second Circle.	Timber and other forest produce.	..	..	..	..	..
Direction	Do.	16,232 1 5	1,21,908 0 11	1,38,140 2 4	1,29,040 6 11 (a) 1,230 4 5 (b) 2,850 0 0	5,019 7 0
Bellary	Do.	28,630 8 3	2,15,410 5 5	2,44,040 13 8	2,25,038 3 2	19,002 10 6
Anantapur	Do.	8,881 6 11	1,24,149 13 1	1,33,031 4 0	1,31,436 10 0	1,594 10 0
Guntur	Do.	..	65,361 7 1	65,361 7 1	65,281 7 1 (a) 30 0 0	50 0 0
Kurnool, East	Do.	16,274 4 4	77,865 2 3	94,139 6 7	94,018 14 7 (a) 19 0 0	101 8 0
Do. South	Do.	15,836 12 0	1,19,847 15 5	1,35,684 11 5	1,20,518 4 2	15,166 7 3
Do. West	Total ..	85,855 0 11	7,24,542 12 2	8,10,397 13 1	7,65,333 13 11 (a) 1,279 4 5 (b) 2,850 0 0	40,934 10 9
Third Circle.	Timber and other forest produce ..	6,951 14 0	35,974 10 0	42,926 8 0	35,225 12 0	7,700 12 0
Cuddapah, North	Do.	14,059 0 6 (a) — 9 2 2	31,851 12 6	45,901 10 10	30,512 10 10	15,389 0 0
Do. South	Do.	9,280 14 6	64,452 2 11	73,733 1 5	65,804 5 11	7,928 11 6
Do. West	Do.	76,385 0 5 (b) — 442 9 5	1,54,304 7 9	2,30,246 14 9	1,78,155 11 9 (b) 74 12 2	52,016 6 10
Nellore	Do.	15,933 14 8	48,108 1 7	64,042 0 3	58,753 2 3 (a) 21 13 9	5,267 0 3
Chingleput	Do.	52,983 7 2	95,057 6 7	1,48,040 13 9	1,30,770 9 4	17,270 4 5
Chittoor	Do.	13,314 6 9	1,08,916 13 6	1,22,231 4 3	1,07,849 6 2	14,381 14 1
Vellore, North	Total ..	1,88,908 10 0 — 451 11 7	5,38,665 6 10	7,27,122 5 3	6,07,071 10 3 96 9 11	1,19,954 1 1
Fourth Circle.	Timber and other forest produce ..	..	1,83,562 0 0	1,83,562 0 0	1,83,562 0 0	..
Direction	Do.	66,422 8 0	1,42,096 12 8	2,08,519 4 8	1,50,929 0 0	57,590 4 8
Vellore, South	Do.	8,662 3 8	1,84,972 15 3	1,93,635 2 11	1,83,832 0 0	9,803 2 11
Do. West	Do.	32,200 3 2	1,80,986 15 3	2,13,187 2 5	1,95,177 0 0	18,010 2 5
Salem, East	Do.	5,267 13 5	42,405 2 3	47,672 15 8	40,487 0 0	7,185 15 8
Do. North	Do.	40,227 15 8	67,981 13 8	1,08,209 13 4	84,199 0 0	24,010 13 4
Do. Central	Do.	34,632 0 0	1,10,537 14 5	1,45,169 14 5	1,35,085 0 0	10,084 14 5
Do. South	Do.	..	70 0 0	70 0 0	70 0 0	..
Forest Engineer	Total ..	1,87,412 11 11	9,12,613 9 6	11,00,026 5 5	9,73,341 0 0	1,26,685 5 5
Fifth Circle for 9 months.	Timber and other forest produce ..	14,015 0 0	74,898 5 0	88,913 5 0	85,000 5 0	3,913 0 0
Kollegal	Do.	25,974 14 3	4,10,990 10 3	4,36,965 8 6	4,32,680 8 6	4,285 0 0
Coimbatore, North ..	Do.	50,285 1 8	2,41,996 9 5	2,92,281 11 1	1,99,795 7 9	92,486 3 4
Do. South ..	Do.	81,364 10 1	1,32,449 14 10	2,13,814 3 11	1,36,903 0 0 * 456 1 10	76,455 7 1
Madura	Do.	82,301 14 4	1,52,517 0 8	2,34,818 15 0	1,64,907 0 0	69,911 15 0
Tinnevelly	Do.	..	145 0 0	145 0 0	145 0 0	..
Forest Engineer	Do.	..	111 0 0	111 0 0	111 0 0	..
Direction	Total ..	2,53,941 8 4	10,13,108 8 2	12,67,050 0 6	10,19,542 5 3 456 1 10	2,47,051 9 5
Sixth Circle.	Timber and other forest produce.	16,615 0 6	87,311 15 7	1,03,927 0 1	84,074 8 7	19,852 7 6
Mangalore, North	Do.	8,254 9 10	79,654 4 4	87,908 14 2	77,533 15 9	10,374 14 5
Do. South	Do.	45,629 4 2	2,30,233 0 2	2,75,862 4 4	1,12,644 1 9	1,63,218 2 7
Malabar, North	Do.	80,560 5 6	4,35,954 15 0	5,16,515 4 6	† 3,67,983 11 6 9 4 0	1,48,522 5 0
Do. South	Do.	18,703 6 6	69,095 3 10	87,798 10 4	75,086 2 2	12,712 8 2
The Nilgiris	Do.	58,151 2 11	78,951 14 8	1,37,103 1 7	1,19,224 1 4	17,879 0 3
Coimbatore, Central ..	Do.	..	13 0 0	13 0 0	13 0 0	..
Forest Research Office ..	Total ..	2,27,913 13 5	9,81,214 5 7	12,09,128 3 0	8,86,559 9 1 † 9 4 0	3,72,559 5 11
Grand total, Presidency ..		10,49,603 11 1	45,12,719 3 11	55,62,322 15 0	46,32,991 12 8	9,29,331 2 4

Note for First Circle. Out of total outstandings of Rs. 22,146-1-9 the amount actually due on or before 31st March 1921 was Rs. 9,033-8-9.
(a) Written off the accounts.

Note for Second Circle. (a) Written off as irrecoverable.
(b) Rebate sanctioned and deducted from the lease amounts of Tangedu bark leases.

Note for Third Circle. (a) Written off as irrecoverable.
(b) Elimination on account of erroneous demand.

Note for Fourth Circle. The difference between the closing balance of last year and the opening balance of this year is due to —
(1) Reconstitution of the divisions in the Circle.
(2) Elimination of Rs. 693-1-2 erroneously included twice in the last year's return.

Note for Fifth Circle. * Rupees 353 realized during 1919-20 and Rs. 103 and odd was written off the accounts.
NOTE.—Of the total outstandings of Rs. 2,47,051-9-5 the amount actually due on or before 31st March 1921 was Rs. 64,369-0-

Note for Sixth Circle. † Written off as irrecoverable.
NOTE.—Out of the total outstandings of Rs. 3,72,559-5-11, the amount actually due on or before 31st March 1921 Rs. 44,853-8-1.

ANNUAL FORM No. 83.

Forest Department, Madras Presidency.

Financial results of the year 1920-21.

District.	Timber and other produce removed from the forests by Government Agency.		Other revenue.		Formation, protection and improvement of forests.	Total.	
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.
First Circle.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Ganjam	15,712	90,134	66,473	36,868	1,12,858	82,185	2,39,860
Vizagapatam	33	290	36,224	37,191	13,949	36,257	51,430
Godavari, Upper ..	16,011	17,477	28,289	28,454	39,825	44,300	85,756
Do. Lower ..	1,424	8,743	2,06,056	66,902	18,857	2,07,480	94,502
Kistna	72	3,598	55,261	28,810	18,876	55,333	51,284
Total ..	33,252	1,20,242	3,92,303	1,98,225	2,04,365	4,25,555	5,22,832 (a) 14,080
Second Circle.							
Bellary	120	..	1,28,920	36,825	19,357	1,29,040	56,182
Anantapur	601	41	2,24,823	43,058	21,426	2,25,424	64,525
Guntur	62	93	1,30,374	43,556	22,857	1,30,436	66,180
Kurnool, East ..	10,862	8,385	54,413	41,172	19,994	65,275	69,551
Do. South ..	15	53	94,023	49,817	26,511	94,038	76,381
Do. West ..	24,528	15,424	95,999	67,336	29,556	1,20,527	1,12,316
Total ..	36,188	23,996	7,28,552	2,81,458	1,39,681	7,64,740	4,45,135 (a) 27,982
Third Circle.							
Cuddapah, North ..	39	..	35,186	38,740	19,943	35,225	58,683
Do. South ..	874	243	29,639	56,864	28,300	30,513	85,407
Do. West ..	35	..	65,700	45,325	23,162	65,805	68,487
Nellore	46,501	5,978	1,31,655	60,643	27,347	1,78,156	93,968
Chingleput	2,632	89	56,121	33,938	26,155	58,753	60,182
Chittoor	1,539	254	1,29,231	64,177	42,365	1,30,770	1,06,796
Vellore, North ..	718	157	1,07,131	30,535	20,167	1,07,849	50,859
Total ..	52,338	6,721	5,54,783	3,30,222	1,87,439	6,07,071	5,24,382 (a) 25,508
Fourth Circle.							
Vellore, South ..	1,06,353	5,616	1,05,664	24,196	(a)1,80,287	2,12,017	2,10,099
Do. West ..	89,697	8,600	56,088	36,940	14,217	1,45,785	59,757
Salem, East	15,520	2,102	1,91,052	47,177	8,832	2,06,572	58,111
Do. North	1,14,537	16,869	38,037	42,031	(b) — 1,104	1,52,574	57,796
Do. Central ..	10,252	1,033	82,168	36,903	12,877	92,420	50,813
Do. South	25,172	1,409	1,35,072	52,336	11,995	1,60,244	65,740
Total ..	3,61,531	35,629	6,08,081	2,39,583	2,27,104	9,69,612	5,02,316 (c) + 23,152
Fifth Circle.							
Kollegal	40,357	5,021	44,696	38,122	19,918	85,053	63,061
Coimbatore, North ..	3,34,357	18,892	98,374	53,067	37,668	4,32,731	1,09,627
Do. South ..	81,612	88,462	1,18,234	43,637	28,235	1,99,846	1,60,334
Madura	144	4,675	1,36,810	62,403	43,546	1,36,954	1,10,624
Tinnevelly ..	95	2,785	1,64,863	60,569	18,377	1,64,958	81,731
Total ..	4,56,565	1,19,835	5,62,977	2,57,798	1,47,744	10,19,542	* 5,25,377
Sixth Circle.							
Mangalore, North ..	20,380	8,065	63,695	31,230	12,180	84,075	51,475
Do. South ..	43,374	37,977	34,159	19,903	10,037	77,533	67,917
Malabar, North ..	83,221	32,284	29,424	18,437	28,741	1,12,645	79,462
Do. South ..	3,20,761	2,07,090	47,223	9,188	40,098	3,67,984	2,56,376
The Nilgiris	37,269	88,904	57,817	22,228	21,030	76,086	1,32,162
Coimbatore, Central ..	6,750	74,015	1,12,474	29,080	1,03,023	1,19,224	2,06,118
Forest research office ..	8	21,431	10	1,010	— 20	13	22,421
Total ..	5 11,758	4,69,766	3,24,802	1,31,076	2,15,089	8,36,560	* 8,15,931
Grand total, Presidency.	14,51,632	776,189	31,71,448	14,88,352	11,21,322	46,23,080	34,26,695

Note for first Circle. (a) Refunds and drawbacks.

Note for Second Circle. (a) Refunds and drawbacks.

Note for Third Circle. (a) Refunds and drawbacks.

Note for Fourth Circle.
(a) Includes charges incurred by the Forest Engineer on road works on the Javadis.
(b) A sum of Rs. 20,000 debited to acquisition of lands in the last year's accounts on account of acquisition of lands (Thirumalavadi Mittah Forests), which was not completed was cancelled and the amount treated as recovered in the current year.
(c) Refunds.

Note for Fifth and Sixth Circle. * Includes refunds and drawbacks.

Note for Fourth, Fifth and Sixth Circles. The discrepancy between the figures showing revenue and expenditure in these circles given in this statement and those given in Form No. 80 has not been explained.

Annual Form No. 84.

Part I.

Forest Department, Madras Presidency.

Statement of elephants and other live-stock during 1920-21.

District.	On hand at the commencement of the year.		Number received during the year.	Number disposed of during the year.	On hand at the end of the year.		Total expenditure on maintenance during the year.
	Number.	Value.			Number.	Value.	
			(1) Elephants.				
			First Circle.				
Godavari, Upper	2	Rs. 3,700	..	..	2	Rs. 3,700	Rs. A. P. 1,874 3 10
			Second Circle.				
Kurnool, West	2	5,000	..	..	2	5,000	1,690 12 7
			Third Circle—Nil.				
			Fourth Circle—Nil.				
			Fifth Circle.				
Coimbatore, South	22	75,000	13	13	22	75,500	15,755 2 6
			Sixth Circle.				
Mangalore, South	12	26,500	..	10	2	10,000	5,583 8 7
Malabar, North	18	58,000	13	2	29	79,900	15,927 -1 1
Do. South	21	80,200	13	10	24	92,000	33,753 2 6
The Nilgiris	51	1,20,100	4	19	36	76,700	31,436 8 0
Coimbatore, Central ..	..	..	8		8	27,300	783 15 6
Total ..	102	2,84,800	38	41	99	2,85,900	87,434 3 8
Grand total (Elephants), Presidency.	128	3,68,500	51	54	125	3,70,100	10,67,54 6 7
			(2) Other Live-stock.				
			First Circle.				
Ganjam	6	355	53	6	53	1,937	1,218 11 0
			Second Circle.				
Kurnool, East	4	34	1	* 5	..	..	..
Do. West	10	a) 530	2	..	12	780	1,560 9 1
Total ..	14	564	3	5	12	780	1,560 9 1
			Third Circle.				
Chingleput	1	35	..	..	1	35	8 14 0
Chittoor	2	70	1	..	3	122	..
Total ..	3	105	1	..	4	157	8 14 0
			Fourth Circle—Nil.				
			Fifth Circle.				
Coimbatore, South	67	4,590	1	4	64	4,440	11,303 15 6
			Sixth Circle.				
Mangalore, South	12	1,015	..	..	12	1,015	2,433 5 0
Malabar, South	107	8,017	..	22	85	6,196	18,123 5 6
The Nilgiris	10	1,042	4	3	11	1,324	2,240 5 8
Coimbatore, Central ..	20	1,200	20	..	40	2,793	8,349 1 10
Total ..	149	11,274	24	25	148	11,328	31,146 2 0
Grand total (Other Live-stock), Presidency.	239	16,888	82	40	281	18,642	45,238 3 7

* Sold for Rs. 35. (a) Revised figures furnished by the District Forest Officer.

PART II.

Forest Department, Madras Presidency.

Statement of elephants gone off the list during the year 1920–21.

District.	Names.	When purchased or otherwise obtained by Government.	Age.	How disposed of.
		First Circle—Nil.		
		Second Circle—Nil.		
		Third Circle—Nil.		
		Fourth Circle—Nil.		
		Fifth Circle.		
Coimbatore, South.	1. Amaravathi ..	Captured on 11th February 1917	23	Died on 11th Aug. 1920.
	2. Dora II ..	Do. 22nd December 1918	7	Do. 3rd Aug. 1920.
	3. Janaki ..	Do. 15th August 1919	31	Do. 5th Feb. 1921.
	4. Nataraj ..	Do. 29th September 1920	25	Do. 10th Feb. 1921.
	5. Ali	Do. 23rd August 1920	4 months.	Do. 14th Oct. 1920.
	6. Varam	Do. 3rd August 1920	2 years.	Do. 14th March 1921.
	7. Garudan ..	Do. 19th September 1920	1½	Do. 6th Dec. 1920.
	8. Jumna	Born on 22nd September 1919	1½	Do. 25th Dec. 1920.
	9. Tippu	Captured on 11th October 1917	9	Sold.
	10. Juno	Do. 19th September 1918	10	
	11. Dora I	Do. 24th October 1918	32	
	12. Bob II	Do. 13th December 1918	8	
	13. Arjuna ..	Do. 23rd August 1920	5	
		Sixth Circle.		
Mangalore, South.	1. Emily	Transferred from North Malabar in 1915 ..	41	Transferred to North Malabar on 26th Dec. 1920.
	2. Horatius ..	Captured in 1918	17	
	3. Lille	Do. 14th October 1918	47	
	4. Sundar ..	Do. 9th July 1919	5	
	5. Ganesh ..	Do. 5th August 1919	13	
	6. Narayani ..	Do. 12th September 1919	13	
	7. Bhima	Do. 20th November 1919	15	
	8. Rukmini ..	Do. 21st December 1919	7	
	9. Mohan	Do. 23rd December 1919	4	
	10. Mogal	Born on 13th October 1919	1	Died on 31st March 1921.
Malabar, North.	1. Krishnan ..	Captured on 1st March 1919	22	Died on 18th Aug. 1920.
	2. Lakshmi ..	Do. 9th April 1920	5	Sold.
Malabar, South.	1. Kalamothi ..	Born on 6th February 1918	3	Sold.
	2. Leela	Captured on 4th March 1919	1	
	3. Kuroki ..	Do. 19th February 1905	23	Transferred to Central Coimbatore on 1st March 1921.
	4. Sankar ..	Do. 21st May 1907	18	
	5. Bhavani ..	Do. 9th April 1913	18	
	6. Maree	Do. 20th March 1905	24	
	7. Moolabaksh ..	Do. 6th April 1911	21	
	8. Kamala ..	Do. 3rd February 1912	28	
	9. Cæsar	Do. 12th February 1910	16	
	10. Rolley	Do. 17th April 1916	19	
The Nilgiris.	1. Jamperi ..	Received from Nilambur on 20th June 1903.	45	Transferred to South Malabar division.
	2. Padmini ..	Do. Chedleth on 16th January 1911.	50	
	3. Damayanti ..	Captured on 21st January 1915	31	
	4. Maree	Do. 20th March 1905	24	
	5. Kamala ..	Do. 3rd February 1912	28	
	6. Tego	Do. 19th June 1905	18	
	7. Moolabaksh ..	Do. 6th April 1911	21	
	8. Savitri	Do. 14th May 1912	42	
	9. Bhavani ..	Do. 9th April 1913	18	
	10. Cæsar	Do. 12th February 1910	16	
	11. Rolley	Do. 17th April 1906	19	
	12. Sankar	Do. 21st May 1907	18	
	13. Lakshimi ..	Received from Ganjam on 31st February 1920.	45	Sold.
	14. Holkar	Captured on 14th February 1918	11	
	15. Perseus ..	Do. 31st August 1918	8	
	16. Yamuna ..	Do. 17th February 1919	4	
	17. Madhavi ..	Received from North Malabar on 30th November 1919.	26	
	18. Nagi	Do.	3	
	19. Padukay ..	Received from South Malabar on 7th November 1919.	7	

ANNUAL FORM No. 85.

Forest Department, Madras Presidency.

Abstract showing the value of stores, tools and plant for 1920-21.

District.	Buildings.				Stores.				Totals.				Difference in value.	
	On hand at the commencement of the year.		On hand at the end of the year.		On hand at the commencement of the year.		On hand at the end of the year.		On hand at the commencement of the year.		On hand at the end of the year.			
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	In favour of the year.	Against the year.
First Circle.		Rs.		Rs.		Rs.		Rs.		Rs.		Rs.	Rs.	Rs.
Direction ..	1	400	1	400	394	4,543	371	4,357	395	4,943	372	4,757	..	186
Ganjam ..	119	43,082	140	48,950	3,829	6,959	4,398	6,910	3,948	50,041	4,538	55,860	5,819	..
Vizagapatam ..	63	10,755	62	20,741	1,489	4,153	1,724	4,343	1,552	14,908	1,786	25,084	10,176	..
Godâvari, Upper.	127	29,263	128	33,449	3,544	12,471	3,564	13,247	3,671	41,734	3,692	46,696	4,962	..
Godâvari, Lower.	149	43,073	157	45,250	2,270	4,240	2,281	4,820	2,419	47,313	2,438	50,070	2,757	..
Kistna ..	36	4,772	36	5,706	1,537	10,155	1,824	13,954	1,573	14,927	1,860	19,660	4,733	..
Total ..	495	1,31,345	524	1,54,496	13,063	42,521	14,162	47,631	13,558	1,73,866	14,686	2,02,127	28,261	..
Second Circle.														
Direction ..	..	..	..	..	..	..	20	481	..	..	20	481	481	..
Bellary ..	40	46,719	40	45,597	2,473	11,181	3,242	13,258	2,513	57,900	3,282	58,855	955	..
Anantapur ..	34	47,746	32	47,676	2,959	5,874	2,850	5,763	2,993	53,620	2,882	53,439	..	181
Guntûr ..	28	10,434	27	12,155	3,105	7,098	2,701	7,299	3,133	17,532	2,728	19,454	1,922	..
Kurnool, East.	93	62,557	91	70,180	4,381	9,834	4,740	12,237	4,479	72,391	4,831	82,417	10,026	..
Do. West.	(a) 78	92,648	70	91,817	4,371	20,756	4,257	21,692	4,449	1,13,404	4,327	1,13,509	105	..
Do. South.	70	48,923	70	52,208	2,876	7,384	2,564	7,965	2,946	56,307	2,634	59,873	3,566	..
Total ..	348	3,09,027	330	3,19,633	20,165	62,127	20,374	68,395	20,513	3,71,154	20,704	3,88,628	16,874	..
Third Circle.														
Direction ..	..	..	..	..	363	2,473	337	1,788	363	2,473	337	1,788	..	685
Cuddapah, North.	47	22,257	47	21,145	1,560	3,705	1,497	3,528	1,607	25,962	1,544	24,673	..	1,289
Cuddapah, South.	51	31,884	53	36,218	1,494	6,496	1,844	8,539	1,545	38,380	1,897	44,757	6,377	..
Cuddapah, West.	41	14,049	34	14,046	1,983	5,583	1,869	7,356	2,024	19,632	1,903	21,402	1,770	..
Nellore ..	58	36,556	50	29,001	52,538	41,561	56,065	43,824	52,596	78,117	56,055	72,825	..	5,292
Chingleput ..	24	9,202	25	10,861	2,331	4,017	2,348	3,687	2,355	13,219	2,373	14,548	1,329	..
Chittoor ..	41	24,998	41	30,555	3,520	10,880	4,015	10,648	3,561	35,878	4,056	41,213	5,335	..
Vellore, North.	38	24,723	37	19,438	1,336	3,928	1,549	4,514	1,374	28,651	1,586	23,952	..	4,699
Vernacular Training School.	..	..	..	..	671	1,220	668	1,166	671	1,220	668	1,166	..	54
Total ..	300	1,63,669	287	1,61,274	65,796	79,863	70,132	85,050	66,096	2,43,532	70,419	2,46,324	2,792	..
Fourth Circle.														
Direction ..	..	..	..	..	220	1,707	220	1,753	220	1,707	220	1,753	46	..
Vellore, South.	53	34,481	53	41,555	2,358	5,766	2,404	5,843	2,411	40,247	2,457	47,398	7,151	..
Do. West.	40	29,715	43	28,785	2,602	7,492	2,751	7,611	2,642	37,207	2,794	36,396	..	811
Salem, East ..	62	33,422	62	33,588	2,249	13,685	2,205	13,836	2,311	47,107	2,267	47,424	317	..
Do. North..	61	26,985	58	26,175	2,320	37,149	2,854	32,822	2,381	64,134	2,912	58,997	..	5,137
Do. Central.	69	55,268	69	54,621	2,692	16,216	2,686	15,106	2,761	71,484	2,755	69,727	..	1,757
Do. South..	41	24,235	54	30,841	4,675	10,437	4,768	9,828	4,716	34,672	4,822	40,669	5,997	..
Vernacular Training School.	..	..	..	..	878	1,911	996	1,990	878	1,911	996	1,990	79	..
Total ..	326	2,04,106	339	2,15,565	17,994	94,363	18,884	88,789	18,320	2,98,469	19,223	3,04,354	5,885	..
Fifth Circle.														
Direction ..	1	57	1	54	408	4,600	427	3,924	409	4,657	428	3,978	..	679
Kollegal ..	34	17,419	34	20,591	20,345	5,612	20,417	5,662	20,379	23,031	20,451	26,253	3,222	..
Coimbatore, North.	78	1,04,725	77	95,427	2,475	11,180	2,656	10,537	2,553	1,15,905	2,733	1,05,964	..	9,941
Do. South.	66	49,312	71	55,689	25,470	50,255	25,350	48,799	25,536	99,567	25,421	1,04,488	4,921	..
Madura ..	122	1,02,986	124	1,02,769	3,229	6,387	3,231	6,029	3,351	1,09,373	3,355	1,08,798	..	575
Tinnevelly ..	112	52,673	113	52,338	1,745	4,138	1,776	4,431	1,857	56,811	1,889	56,769	..	42
Vernacular Training School.	..	..	..	..	325	1,410	539	2,190	325	1,410	539	2,190	780	..
Working Plans Office.	..	..	..	..	257	1,593	256	1,503	257	1,593	256	1,503	..	90
Total ..	413	3,27,172	420	3,26,868	54,254	85,175	54,652	83,075	54,667	4,12,347	55,072	4,09,943	..	2,404
Sixth Circle.														
Mangalore, North.	49	27,865	51	29,100	749	4,739	799	4,840	798	32,604	850	33,940	1,336	..
Do. South.	30	20,792	29	25,625	833	4,562	871	3,671	863	25,354	900	30,296	4,942	..
Malabar, North	85	51,822	89	55,909	2,388	3,812	2,504	6,310	2,473	55,634	2,593	62,219	6,585	..
Do. South.	55	38,733	53	37,012	3,030	13,339	2,860	12,702	3,085	52,072	2,913	49,714	..	2,358
The Nilgiris ..	75	40,631	74	38,621	2,414	9,647	2,613	10,492	2,489	50,278	2,687	49,113	..	1,165
Coimbatore, Central.	53	24,562	53	24,562	2,139	22,499	2,158	22,841	2,192	47,061	2,211	47,403	342	..
Total ..	347	2,04,405	349	2,11,829	11,553	58,598	11,805	60,856	11,900	2,63,003	12,154	2,72,685	9,682	..
Grand total, Presidency.	2,229	13,39,724	2,249	13,89,365	182,815	4,22,647	190,009	4,33,796	185,054	17,62,371	192,258	18,23,461	61,090	..

(a) (West Kurnool.)

Difference between the closing balance of 1919-20 and the present opening balance is due to the adoption of correct figures furnished by the District Forest Officer.

NOTE.—The difference between the closing balance of last year and the opening balance of this year is due to redistribution of districts and to revised figure furnished by District Forest Officers.

Government of Madras

DEVELOPMENT DEPARTMENT

G.O. No. 2144, 17th November 1921

Administration report—Forest Department—For the year ending 31st March 1921—Reviewed.

READ—the following paper :—

Proceedings of the Chief Conservator of Forests, No. 39, dated 17th September 1921.

S. Cox, Esq., C.I.E., I.F.S.,
Chief Conservator of Forests.

Letter—from S. Cox, Esq., C.I.E. I.F.S., Chief Conservator of Forests.
To—the Secretary to Government, Development Department.
Dated—Madras, the 17th September 1921.
No.—39.

I have the honour to submit the progress report of forest administration in the Madras Presidency for the year ending 31st March 1921.

In accordance with the orders of Government in G.O. No. 91, Revenue (Special), dated 18th January 1921, directing that the forest administration report should be compiled for the financial year in future instead of for the forest year, the present report has been drawn up for the period of nine months from 1st July 1920 to 31st March 1921. For this reason comparisons of the results of the past year's working with those of previous years are of little value.

2. In the following remarks I have briefly reviewed the more important facts of the administration.

CONSTITUTION OF STATE FORESTS

Alteration in area

3. The area of reserved forests increased from 18,794 square miles to 18,825 square miles, with a corresponding decrease in the extent of reserved land from 565 square miles to 500 square miles. Five square miles were disafforested to provide for extension of cultivation in Guntūr and North Cuddapah and for the removal of forest boundaries from the close proximity of villages in West Kurnool, and about 16 square miles in Tanjore were transferred to the control of the Collector. The department was thus left in charge of 19,325 square miles as compared to 19,359 square miles in the beginning of the year.

Forest settlement

4. Some 60 square miles of forest were finally settled under the Forest Act, of which 54 square miles are in Upper Gōdāvari division. Settlement operations remain incomplete in respect of a further area of 474 square miles, including 250 square miles in the Nugur taluk of the Bhadrachalam Agency and 75 square miles in the Nīlgiri-Wynaad. Of the remaining extent 75 square miles of the Coringa extension reserve were settled during the year, but the reservation took effect only after its close. Arrangements have been made for the reservation of 37 square miles of hill-forest in the Atur taluk of the Salem district for the protection of the sources of water-supply in that locality. The Special Deputy Collector employed on the settlement completed the settlement of five blocks covering an area of 12 square miles.

Demarcation

5. About 80 miles of forest boundaries were demarcated during the year chiefly in the districts of Gōdāvari Upper, Kollegal, Central Coimbatore and North Malabar at a cost of Rs. 3,742 and 430 miles remained to be demarcated at the close of the year chiefly in the districts of Kollegal (183 miles) and North Coimbatore (101 miles). It would appear that the work of final demarcation in this part of the Presidency has for some time been neglected partly owing to want of money and

partly for want of staff. The Conservator of Forests, V Circle, has already taken up the question. In The Nilgiris the inaccuracy and want of definition of the very complicated forest boundaries still give a great deal of trouble. The re-examination and survey of the boundaries which were taken up by a special staff was dropped during the war before much progress had been made and the work will now have to be restarted and pushed through to completion.

The responsibilities of the department for the maintenance of forest boundaries may be appreciated when it is realized that the latter reach a length of 21,000 linear miles equivalent nearly to the mean circumference of the earth.

Survey

6. The Survey of India Party continued operations in the Guntūr and Nellore districts and surveyed 635 square miles on the two inches scale and 64 square miles on the one inch scale. In South Coimbatore the lower Anamalai slopes in the Udumalpet range were surveyed on the one inch scale.

MANAGEMENT

Working Plans

7. From the figures compiled from the circle returns it appears that sanctioned working plans exist for an area of 8,395 square miles, are under preparation for a further area of 1,611 square miles and are still required for 5,899 square miles.

These figures are misleading, but it would take considerable time to supply an accurate statement. In next year's administration report it is hoped that an attempt will be made to supply accurate figures. based on a distinction between regular working plans and temporary working schemes, and between the periodical revision of existing plans and schemes and the preparation of new ones.

The inaccuracy of the figures annually printed in the administration report goes back many years and has been cumulative. The management of nearly all State forests under working is subject to a working plan, but many of these plans are so obsolete and defective that they have been discarded in favour of temporary schemes applicable to the part of the forest actually under treatment until such time as the whole working plan can be recast.

Two important working plans, that of Mr. R. Bourne for the Nilambur valley forests and of Mr. A. Minchin for the Gumsūr forests, are now in the Press.

WORKS

Roads and Communications

8. Two hundred and twenty-four miles of new roads were constructed at a cost of Rs. 2·25 lakhs, and 1,180 miles were repaired at a cost of Rs. 0·69 lakh.

The scheme of road development on the Javadi hills was pushed on and Rs. 0·87 lakh and Rs. 0·49 lakh were spent on the Amerdi-Nadanur road and on the Komattiyeri-Patrakad road respectively. Proposals have been made to Government to limit the scheme of road development on these hills, so far as the construction of expensive roads are concerned, to the completion of construction of these two works.

In connexion with the exploitation of the Chenat Nair forests the construction of the road from Olvakode Railway station to the foot of the hill forest and the continuatin of this road from the Dhoni depot to the forest station on the Sappal ridge were undertaken, but were not quite completed by the end of the year; Rs. 36,984 and Rs. 9,809 respectively were spent on the two works. Government have sanctioned after the close of the year the construction of the first six miles of the Mount Stuart Ghat road at a cost of about Rs. 2,02,250.

The bullock tramway at Mount Stuart by levelling down the track on each side of the metals and by the clearance of overhanging growth was put into much better working order.

Buildings

9. Considerable progress was made with the construction of the saw-mill buildings at Russellkonda. Miscellaneous building works such as inspection bungalows, Range offices, Rangers' quarters and subordinate lines were carried out in various parts of the Presidency.

Other works

10. A sum of Rs. 11,000 was spent on the construction and repair of tanks and wells and on the improvement of the water-supply in the forests. In the South Coimbatore division, the depths prescribed by a water-diviner in the wells at Mount Stuart were reached but no perennial source of water was tapped. Further investigation was postponed until a boring apparatus could be obtained.

The desirability of affording greater drinking water facilities in forest reserves was discussed in the Legislative Council meeting last year. The matter was brought to the notice of Conservators of Forests with the request that the District Forest Officers should be instructed to take action wherever hardship exists in the matter of access to water and to prevent prosecution for trespass where cattle are driven into the forests merely for watering.

LIVESTOCK

Elephants

11. The number of elephants in charge of the department at the beginning of the year was 128, including 4 baggage elephants working in Kurnool and Gōdāvari. Twenty elephants were added by capture, two were born in captivity, ten died and fifteen were sold leaving a balance of 125 elephants of the total book value of Rs. 3,70,000. The actual sale value is probably about 6 lakhs. A sum of Rs. 41,475 was realised by the sale of 15 elephants in December last: most of them were less than five years old.

There was considerable mortality among elephants in the South Coimbatore division where eight animals died from attacks of internal parasites. The Superintendent, Civil Veterinary Department, has made certain suggestions in regard to change of camping grounds and other remedies which are now under consideration.

Cattle

12. A stud of 239 bullocks and buffaloes was maintained during the year. Forty died and eighty-two were added by purchase to the stock which stood at 281 with a book value of Rs. 18,642 at the end of the year.

FOREST CONSERVANCY

General protection

13. Stimulated by the general unrest and by the preaching of non-co-operation, the attitude of villages in some parts of the Presidency has become increasingly antagonistic to the Forest Department; and the difficulties of forest conservancy have been accentuated.

Complaints have not been confined to cases of ill-treatment, injustice and hardships or what appears to the villagers to be such; but have extended to the existence of forest reserves, and demands have been made for wholesale disafforestation and surrender of control of the forests to the villagers themselves.

With this attitude there is a good deal of sympathy on the part of some of the more educated members of the community, a fact which makes the task of the department more difficult than ever.

No experienced forest officer will dispute the fact that unnecessary cases of hardship do occur, nor that it is the duty of the department to remove them wherever brought to light; but the real difficulty is that most of the villagers' demands are destructive of the permanence of the forest and that the rules in force cannot in most cases be relaxed without injury to the permanent interests of the country.

It seems a hardship to raise the grazing fees applied to a villager's cattle or to forbid the use of a permit entitling the villager to obtain from the forest his small daily requirements of firewood. But with insufficient pasture available in the forest to maintain even half of the cattle which the villagers wish to graze and with all the evidence of forest destruction by unregulated felling before them, the Government, in the interests of future generations of villagers, must impose these and similar restrictions.

Educated opinion would perhaps more readily support the Forest Department in its efforts to preserve the forests were it more in touch with the facts; but the almost complete destruction of forest on waste land during the last 20 years, the rapid degradation of private forests, and the results which have always followed the removal of restrictions are seldom brought to notice and remain unappreciated except by the few whose business it is to note them.

More active sympathy would also be extended to the efforts of the department were there not a general idea that the State forest resources were very large and that no real harm can be done by throwing out of reservation those forests most coveted by the present generation of villagers or by relaxation of the restrictions when the demand is very great.

The truth is that the present forest resources are already insufficient to meet the wants of a vast agricultural population and that relaxation of conservancy or actual disafforestation only widens the gap between supply and demand.

The remedy for the present state of things is hard to find. A fuller knowledge on the part of the leaders of the people of the facts connected with the forests, and of the aims and objects of the forest conservancy would do much to dispel some of the antagonism and that is what the department should strive for by every means in its power.

The ideal to be aimed at is the surrender of all forests on which the villager depends for his daily wants to the management of the village itself, but such a surrender must be accompanied by some guarantee that the forests are not destroyed by the selfishness of the present generation. Public opinion is yet far from grasping the many difficulties of the case.

The results of general protection during the nine months under report were, as may be imagined, more unsatisfactory than usual and a regrettable feature was the increase of assaults on isolated and unprotected forest subordinates.

Breaches of the Forest Act

14. The following table compares the forest offences of all kinds reported during the year with those of the previous year :—

—	Injury to forests by fire.		Unauthorized felling.		Unauthorized grazing.		Other offences.		Total.		Average of three years ending 1919-20.
	1919-20.	1920-21.	1919-20.	1920-21.	1919-20.	1920-21.	1919-20.	1920-21.	1919-20.	1920-21.	
Cases taken to Court.	34	26	4,187	4,288	1,829	1,873	336	333	6,386	6,520	6,673
Cases recommended for composition.	47	29	12,941	10,343	5,528	4,950	908	794	19,424	16,116	18,578
Cases undetected.	1,214	905	342	343	154	46	17	17	1,727	1,311	1,679
Total ..	1,295	960	17,470	14,974	7,511	6,869	1,261	1,144	27,537	23,947	26,930

Unauthorized felling as usual forms the largest head of forest crime in all the circles, the Fourth Circle contributing 33 per cent of the total. The grazing offences have also proportionately increased notably in the Third Circle which contributed 37 per cent of the total number of offences under the head. They were most numerous in the districts of Guntūr, Nellore, Vellore North, Chingleput and Chittoor. Seventy per cent of the cases that remained undetected related to offences connected with injury to forest by fire.

Of 21,482 cases disposed of during the year (including cases of the previous year) 6,121 cases were dealt with by Magistrates, 14,032 were compounded and 1,329 cases were withdrawn. Of the cases disposed of by Magistrates, 5,519 ended in conviction and 602 in acquittal. The percentage of failure in the cases brought to trial was 9·8. During the year the average compounding fee paid in respect of 14,032 cases was Rs. 12-12-11.

Fire Protection

15. In 258 square miles of reserves in Upper Gōdāvari 35 square miles of forest in Satyamangalam and Talamalai ranges in North Coimbatore and about 5 square miles of forest in Kollegal the scheme of early burning under departmental agency

was tried for the first time and with particular success in Upper Gōdāvari. This system, introduced by Mr. Hodgson last year in portions of the Nallamalais, was continued on a larger scale in the three Kurnool divisions and 1,308 square miles of forests were protected. The results were satisfactory; a little less than 50 square miles having been burnt.

The question of fire protection continues to be as difficult as ever in the Cuddapah district and more especially in the Seshachalam hills. A second conference of Revenue and Forest officers discussed measures of reform and Mr. J. S. Scot, Deputy Conservator, was placed on special duty to submit definite proposals. His recommendations are under consideration and it is hoped to enlist the co-operation of the local Members of the Legislative Council in dealing with this very difficult subject.

In passing orders on the Forest Administration Report for 1919–20 Government desired that Collectors and other Revenue officers should use every opportunity at the annual jamabandi and in the course of their tours of impressing upon the villagers living in the vicinity of forests the necessity of rendering prompt assistance to the subordinates of the Forest department in preventing or extinguishing fires. I have brought this suggestion formally to the notice of Collectors. Some Collectors especially those of Chittoor (Mr. T. Reilly) and Nellore (Mr. J. F. Hall) personally and by issue of a general order to their subordinate officers have endeavoured to give effect to the orders of Government. As pointed out by the Conservator of Forests, Third Circle, admonition and advice by the officers of the Revenue Department are more effective than similar endeavours made by Forest officers; but little can be done without the help and co-operation of the people themselves whose true interests are gravely affected by the wanton destruction of forest.

The total area over which special protection was attempted during the year was 5,997 square miles and the results seem to have been on the whole more satisfactory than those of last year; but no adequate account of the operations is possible as the period under report terminated in the middle of the fire-season. Conservators have been requested to deal with the subject in future for the calendar year, in order that there may be a more connected record of operations.

SUPPLY

Timber

16. The output of timber during the period under review was 98,450 tons against 105,800 tons in the previous year but as the figures relate to a period of only nine months and omit those of greatest activity the comparison is of no value. A somewhat interesting development was the supply of ebony logs for fittings in some of the new public buildings under construction at Delhi. Another innovation was the supply of logs of *Terminalia tomentosa* to Messrs. Howard Brothers and Co. who are the agents for timber to the Government of India in London. The timber of this common tree has commanded a sale in London for cabinet work at very high prices and we are attempting to develop the market.

Apart from the above and the exploitation of about 600 tons of miscellaneous timber from the Chenat Nair forest for supply to Messrs. John Taylor & Sons' Committee at Kolar, there is nothing of special interest to record.

Fuel

17. The output of fuel during the period of review amounted to 21,983 tons. There has been a slight increase in the price of fuel in some large towns due either to increased cost of transport and wages or to increased demand and short supplies or to both. The highest prices at the close of the year were Tanjore Rs. 22-8-0 per ton, Madura Rs. 25 per ton, Trichinopoly Rs. 22 per ton and Tinnevelly Rs. 22 per ton, the same districts in which prices ruled high last year.

The question of starting casuarina plantations in Ramnad and Tinnevelly to meet the serious shortage of fuel in Madura and Tinnevelly towns is still engaging the attention of the department. Should the scheme prove feasible, Government will be addressed separately on the employment of a special officer, preferably a retired officer, to investigate the scheme, as there is no one of sufficient experience to spare on the active list.

Sandalwood

18. In the auction sale held at Satyamangalâm last December, 202 tons of sandalwood were sold for Rs. 3,24,909, while in the sales held at Tirupattur and Vellore about the same time, 216 tons were sold for Rs. 3,42,562. The total average price secured was Rs. 1,593 per ton against Rs. 1,439 a ton in the preceding year. There is some reason for doubt whether these high prices will continue.

Bamboos

19. The revenue from bamboos showed signs of declining and this decline is likely to be accentuated during the next few years owing to the dying back of the stock on very large areas. The periodical seeding accompanied by death of the parent plant commenced some ten or twelve years ago in the Bombay forests and has been slowly spreading down the West Coast. It has now reached South Malabar and is occasioning not only loss of revenue but great practical difficulty in the matter of rafting timber to the sea coast. Similar phenomena are to be observed in the Javadi and other neighbouring hills in Salem, etc., as well as in the Gōdāvari Agency tracts. The matter is one of considerable importance as it has already put back for ten years the opportunity for developing the bamboo pulp industry on the West Coast and may render useless the proposed detailed investigations into the bamboo pulp question in Gōdāvari. The revenue for nine months of the year under report was Rs. 2·64 lakhs as against Rs. 3·49 lakhs for the previous twelve months.

Grazing

20. Twenty-three per cent of the total area of forests was closed to grazing either wholly (19 per cent) or part of the year (4 per cent) against 19 per cent in the previous year. The increase in closed areas occurred chiefly in the districts of Nellore and Chittoor and was due in the former division to closure of worked coupes attached to kanchas for part of the year, while in the latter division it was due to the closure of seventeen reserves in the Madanapalle range for four months of the hot weather.

To the open area of nearly 14,900 square miles, permits were issued for the grazing of 2,018,083 animals yielding an incidence of 4·71 acres per animal against 4·69 acres in the previous year. As remarked in paragraph 22 of the last year's review, some areas which are shown as open contain forests in which there is normally no grazing or which are inaccessible to cattle. It is not therefore surprising that the actual incidence in some forests is still very high. To check the excessive incidence and to reserve the available resources for the better class of cattle, enhanced rates of grazing fees were imposed in four more divisions, South Vellore, Chittoor, Vizagapatam (8 annas per cow unit) and South Kanara (6 annas). Owing to drought, seventeen closed reserves covering an area of 29,109 acres were thrown open to grazing in the Bellary district. In Anantapur all closed areas were thrown open to grazing except small extents under cultural operations. Similarly in Kurnool, closed areas have been opened to grazing in Cumbum, Markapur and Morricheruvu ranges. In some cases, these concessions were granted after the close of the year.

The grazing revenue realized during the year was Rs. 8,16,589 against Rs. 8,53,555.

In Nellore and Chingleput the kancha system of grazing was continued and is reported to have worked well, but it is very difficult to persuade villagers elsewhere of the advantages of the system.

Hay

21. The Military Department's operations during the year resulted in the removal of the following quantities of baled hay:—

	TONS.
Bellary	606
Anantapur	1,400
Kurnool	1,053
Cuddapah	613
Chittoor	135
North Arcot	113
Total	3,920

for which a sum of Rs. 7,840 was paid to the department.

Mohwa Flowers

22. A number of inquiries have been made by commercial firms both to the Forest Department and the department of Industries on the possibility of collecting sufficient raw material for the distillation of power alcohol, a process already undertaken in Hyderabad.

The most promising field for enterprise appears to be the Agency tracts of the Northern Circars; but there are many difficulties connected with shortage of labour, with safeguarding the rights of the hillmen, and with lack of means of transport. The Agency Commissioner is undertaking further inquiries.

Nux-Vomica

23. A keen demand for this produce has arisen of late owing to the demand for strychnine for the preparation of insecticides for use in agriculture, and prices have risen in proportion.

It was found necessary to organise the collection of this hitherto neglected product.

With the exception of a few special localities these seeds, which were clubbed with a number of other kinds of minor produce in the annual leases, were hardly exploited at all, though they are to be found in every district and are entirely absent only in the wettest and the driest tracts.

In order to regulate and stimulate the harvesting, this item was separated from the rest in the period under report and the right to collect it sold by auction by forest divisions for a period of three years.

The Agency tracts, however, were excluded from the sales as, also, the districts of Ganjām and South Kanara which had already been leased for a period of three years in the preceding year. The Shriharikota Range of the Nellore district was also excluded as there these seeds are collected departmentally.

The lease being for a period of three years the lessees are in a position to work on a satisfactory basis on a large scale and to balance an unproductive year by a good one. The results of the sales, however, failed to come up to expectations but the latter were, perhaps, too sanguine where a new enterprise was concerned. Moreover, the current leases are the first steps in the direction of establishing what is practically a new departure and considerable development is anticipated.

Unforeseen problems presented themselves as the undertaking evolved and, no doubt, these reacted on the prices realised.

At the close of the period of three years when the leases will terminate the department should be in possession of a more or less complete knowledge of the yield of each locality and of the factors that influence the collection, data which are almost entirely lacking at present.

Paper Pulp

24. Further attention has been paid to the manufacture of bamboo pulp as an industrial concern and consultations on the subject have been held with the Director of Industries, Dr. Marsden and Mr. Raitt, the paper-pulp expert. A conference was also held in Madras with the Director of Industries and Dr. Marsden when the whole question was discussed. As a result of these deliberations Dr. Marsden has written a pamphlet on the subject, which is under publication by the Government of India as a bulletin of Indian Industries and Labour.

Mr. Raitt has suggested that the first step to be taken is a reconnaisance of the paper pulp resources in Madras to be conducted by an officer specially deputed for the purpose. To begin with the Upper Gōdāvari forests were considered a possible source of supply with a collecting and manufacturing site at Rajahmundry. The publication of Dr. Marsden's pamphlet is awaited before further action is taken in the matter.

Meanwhile the seeding of bamboos throughout the Gokavaram and Peddapur ranges may involve the temporary abandonment of the scheme especially if there are indications of the seeding spreading into the Rampa and Bhadrachallam country. The Conservator has been instructed to report on the matter.

REMOVAL OF PRODUCE BY RIGHT HOLDERS AND FREE GRANTEES.

25. The estimated value of forest produce removed by right holders or free grantees amounted to Rs. 52,337 against Rs. 69,228 in the previous year.

SYLVICULTURE

General

26. The chief interest in the department's work during the year centred in the teak forests at Mount Stuart where the artificial reproduction of teak and other timber trees after clear felling is being steadily worked at. The problem with regard to teak may be said to be solved: but it is undesirable for sylvicultural reasons to confine planting operations entirely to one species, however valuable and the department is endeavouring to bring up plantations of Terminalias, rosewood, and other timber trees to form groups among the teak. The difficulties are explained in the report of the Conservator of the fifth circle. Equally interesting and of great importance are the sylvicultural operations in the Tinnevelly and Chenat Nair evergreen forests, referred to in the reports of the fifth and sixth circles. We have to deal in these forests with a large number of species the sylvicultural requirements of which from youth to maturity can only be ascertained by a course of close study extending over many years.

Research and Experiment

27. Mr. K. R. Venkataramana Ayyar, Deputy Conservator of Forests, held the office of Sylviculturist from 1st July 1920 to 6th March 1921 when he proceeded on leave and was relieved by Mr. W. C. Hart. Experimental work was conducted at Dhoni, Nilambur, Nedungayam and in the neighbourhood of Parappa in South Mangalore. At Dhoni, the work consisted of nursery experiments on the germination of seed and growth of seedlings and of sowing the seed of various species in the forest under varying conditions. At Nilambur and Nedungayam experiments were conducted to ascertain whether the valuable evergreen species *Hopea parviflora* and *Artocarpus hirsuta* could be raised as an underwood to teak plantations partly with a view to improve the growth of teak and partly for the sake of having a commercially valuable industry. In South Mangalore important experiments were continued with *Hopea parviflora* to ascertain the best method of inducing natural reproduction, of obtaining artificial production and of methods of transplantation of seedlings at various ages. It is in this part of the country that we look towards the formation by natural means of large forests of *Hopea* and the permanent supply of constructional sleeper timber on a large scale.

Mr. S. W. Howard, Imperial Sylviculturist visited the Presidency in May last, and has offered valuable suggestions in regard to the lines on which research work should be carried on in this Presidency. His opinion is that research work in this Presidency has been organised so far on correct lines, but we are only at the threshold of our task.

The first Bulletin of sylvicultural research was issued early this year giving details of the work done during 1920–21.

DEVELOPMENT

28. Mr. C. S. Martin, the Consulting Forest Engineer to the Government of India, visited the evergreen forests of Malabar and Tinnevelly and the teak plantations of Nilambur, and has made valuable suggestions for their exploitation.

These reports will shortly be placed before Government. Mr. Martin considers that the exploitation of the mountain forests is not only a perfectly feasible project but will, if conducted on commercial and scientific lines, bring in a large revenue to the State and provide opportunities for creating a number of forest industries suitable for the investment of private enterprise and capital.

He lays special stress on the dependence of Madras on foreign supplies for the better classes of timber and for railway sleepers in particular and on the need for developing to the full the State resources in view of the rapid devastation of forests in private ownership.

FOREST PANCHAYATS

29. Mr. Bles' report on the working of forest panchayats has been under the consideration of Government for some time past and as the system is likely to be changed, I have not thought it necessary to call for special reports from Collectors.

The Circle reports, however, show that the Conservators are dissatisfied generally with the working of the panchayats. Mr. Fischer quotes the opinion of an Indian gentleman (an M.L.C.) to the effect that it is hopeless to expect panchayats to manage forests satisfactorily unless there is a representation of all interests in the village—in fact the village-panchayat to be formed under the new Village Panchayat Act. This is a point of view which will be considered in future but it is difficult to understand why a panchayat composed of members with many interests should function more efficiently than one solely composed of villagers who are directly interested in the forest.

FINANCE

30. The total gross revenue during the period amounted to Rs. 46·16 lakhs and the expenditure under A. Conservancy and Works and B. Establishments to 34·28 lakhs. The net result was a surplus of Rs. 11·88 lakhs, which was distributed over all the circles except the first which shows a deficit. The fifth circle stands first with a surplus of Rs. 4·81 lakhs, and the fourth circle next with a surplus of Rs. 4·48 lakhs. The sixth circle shows a surplus of Rs. 0·21 lakh, while in the first circle there is a deficit of Rupees 1·11 lakhs. This deficit is likely to continue until the Russellkonda saw-mill has been in operation for some time.

The expenditure under A. Conservancy and Works (Rs. 15·69 lakhs) and that under B. Establishments (Rs. 18·54 lakhs) was greater than last year for the corresponding period. The increased expenditure under the former head was due mainly to the felling of timber for the saw-mill at Russellkonda and the construction of saw-mill buildings, the exploitation of the Chenat Nayar forests in Central Coimbatore and the construction of Javadi roads, while under the latter head, the increase was due to the general rise in prices and grant of temporary additions to the pay of forest subordinates.

Since the figures reviewed above relate to a period of nine months, no useful purpose is served by comparing them with the figures of receipts and expenditure of previous years.

ADMINISTRATION

Circle Charges

31. The outstanding feature of the Forest Administration during the year was the creation of two additional forest circles, with headquarters at Bellary and Ootacamund. In the re-arrangement of divisional charges consequent on this change, opportunity was taken to re-name some of the existing divisions to prevent confusion in correspondence—the Central Coimbatore division now included in the sixth circle being called Palghat division; the North Malabar and South Malabar divisions being called Wynaad and Nilambur divisions respectively.

Imperial Forest Service

32. Orders were received from the Government of India during the course of the year with reference to the recommendations of the Public Services Commission. The cadre of the service has now been raised from 43 to 61, including 7 posts of Extra Deputy Conservators which were transferred to the Imperial Service. The Secretary of State's final orders on questions of pay, pension and leave have not yet been received.

Provincial Forest Service

33. This service is in future to be known as the Madras Forest Service. No final orders have yet been received from the Government of India on the memorials submitted by its members.

The Forest College

34. Mr. C. C. Wilson acted as Principal during the absence of Mr. F.L.C. Cowley-Brown on leave. Of the 28 students passing out of the College in June 1921 five were stipendiary students from Bombay and two from Coorg, two Ceylon students and one Hyderabad student also passed the College course.

The general standard of education attained at the College was satisfactory and although no Honours certificate was granted, only seven students failed to take higher standard certificate.

The Hon'ble Sir Lionel Davidson, K.C.S.I. and Mr. P. H. Clutterbuck, C.I.E., C.B.E., Inspector-General of Forests, visited the College during the prize week, at which Lady Davidson presented the prizes. Sir Lionel Davidson also visited the College in the first week of June to inquire into the questions of building extension, water-supply and other matters connected with the College.

Vernacular Schools

35. Four schools were held as in previous years and the work turned out seems to be as satisfactory as usual. At the Goomsur school five forest guards deputed by the Government of Bihar and Orissa were trained.

GENERAL

36. I have again to acknowledge the excellent conduct and hard work of all ranks of the department in conditions which were often very discouraging.

S. Cox,
Chief Conservator of Forests.

Order—No. 2144, Development, 17th November 1921.

The Government have read with interest the Chief Conservator's report on the administration of the Forest Department for the nine months ending 31st March 1921. The period in issue resulted in a nett surplus of 11·88 lakhs as against 24·37 lakhs in the preceding twelve months. As Mr. Cox points out in paragraph 30 of his review, comparisons of receipts and expenditure are vitiated by the difference in the period; moreover forest revenues are not realized evenly throughout the year. The most noteworthy variation relates to the Sixth Circle where the gross receipts were over two lakhs less than in the corresponding period of the preceding year in consequence mainly of a fall in the price of timber in South Malabar. It is satisfactory to be informed that this fluctuation was only of a temporary nature. It is ascribed to the fact that the Arab traders who ordinarily purchase teak at Calicut were occupied with other business transactions elsewhere and consequently postponed their usual annual visit to Malabar; when this took place subsequently the price of teak recovered and the stock on hand found purchasers.

2. The Government are in general agreement with Mr. Cox's appreciation in paragraph 13 of his review of the grave administrative difficulties created by the increasingly antagonistic attitude of the villagers towards the Forest Department. This attitude has been reflected in the discussions of the Legislative Council which have emphasized the need for systematic exposition of the aims and objects of forest conservancy. While forest officers themselves can do much useful work in this direction, the Government rely upon the recently created Standing Committee of the Legislative Council as an agency of special value for the purpose of dispelling popular misconceptions and creating a spirit of co-operation with a department which exists only for the public good but is bound to have regard to the interests not only of the present generation but also of future generations. In no branch of forest administration is co-operation more necessary than in respect of the regulation of grazing, the future of which is intimately connected with the development of forest panchayats. The Government have formulated a tentative policy on Mr. Bles' report and the further consideration of that policy will be one of the first and most important duties of the new Standing Committee.

3. A specially interesting feature of the period under report was the visit paid to the Presidency by Mr. C. S. Martin, Consulting Forest Engineer to the Government of India, whose reports on the evergreen forests of Malabar and Tinnevelly are now with Government. Mr. Martin's expert knowledge and long practical experience of the modern lumbering methods followed in America give special weight to his

opinions, and his advice is likely to prove of the greatest value in the systematic exploitation of the more valuable but hitherto undeveloped forests in the Madras Presidency.

4. Progress has been made with the exploitation of the Chenat Nayar forests and with the construction of the Russellkonda saw-mill, but neither project has yet reached the stage of showing definite returns of profit. It is understood that the chartered accountants recently deputed by the Government of India to give advice in regard to the method of accounting for these and similar large schemes have made definite recommendations in regard to the form of the accounts which should be maintained and the Government anticipate that in future the Chief Conservator will be in a position as soon as the audited figures are available, to furnish clear information for each such scheme, distinguishing between capital and revenue expenditure and furnishing accurate details of profit and loss.

5. With reference to paragraph 33 of the report, while there are still certain points which must be referred to the orders of the Government of India, that authority has intimated that it is within the power of the Local Government to deal with some important issues raised in the memorials of the Madras Forest Service. On these a decision has been practically arrived at and will, it is hoped, be announced very shortly.

6. The department as a whole, including the Forest College, continued to work satisfactorily notwithstanding conditions which, as the Chief Conservator remarks, were often very discouraging. Malaria and other risks to health are unfortunately a normal incident in the life of forest officers and subordinates; but during the period under report they had also to face much organised opposition, often involving physical violence and in some cases extending to murderous assaults with fatal consequences. The Government are grateful to all ranks of the department for the loyal and cheerful service which they have rendered; they are particularly indebted to the Chief Conservator, Mr. Cox, for much wise advice and for his careful supervision of the staff under his control.

(By order of the Governor in Council)

J. M. TURING,
Secretary to Government.

To the Chief Conservator of Forest.
" Accountant-General, Madras.
" Government of India, Department of Revenue and Agriculture (with C.L.).
" Inspector-General of Forests (with C.L.).
" Publicity Officer.
Editors' Table.

ADMINISTRATION REPORT

OF THE

FOREST DEPARTMENT

OF THE

MADRAS PRESIDENCY

FOR THE

YEAR ENDING 31ST MARCH 1922

1921-1922

MADRAS
PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRESS

1922

PRICE, 14 *annas.*]

BOMBAY BRANCH
OF THE
Royal Asiatic Society.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1922.

FIRST CIRCLE.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. ALTERATION IN AREA.

Reserved forests and reserved lands.—The year opened with 2,182 and 337 square miles, respectively. Seventy-five square miles of reserved lands were transferred to reserved forests, and there was a small reduction in the area of reserved forests due to disafforestation and rectification of area. The balance on 31st March 1922 was 2,256 square miles of reserved forests and 262 square miles of reserved lands. *First Circle.*

2. FOREST SETTLEMENT.

2. 75·192 square miles were notified under section 16 of the Forest Act and 259·161 remained under settlement.

3. DEMARCATION.

3. Twenty-four miles were demarcated. Sixteen miles were specially repaired at a cost of Rs. 197, while 3,079 miles were repaired by subordinates free of cost. The total length of demarcated lines was 4,069 miles. The students of the vernacular training school helped in the building of cairns and verification of boundaries in $5\frac{3}{4}$ of the nine miles permanently demarcated in *Ganjam*.

4. FOREST SURVEYS.

4. Nil.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. REGULATION OF MANAGEMENT.

5. *Preparation and control of working plans.*—No new working plans were prepared or sanctioned. *Ganjam*—The prescriptions of Mr. Minchin's working plan for the sal forests of Ghumsur were carried out. Mr. Minchin's interim working plan for the forests of Berhampur range continued to be in force. *Vizagapatam*—Mr. Raju Nayakkar's working plan for the forests of Palakonda Range which was pending sanction of the Chief Conservator, was returned as being too lengthy. It will be re-written in a simpler and briefer form by the present District Forest Officer. *Godavari Lower*—A proposal was made for the preparation of a revised working scheme for the Coringa mangrove forests and was approved by the Chief Conservator. The work will be taken up during the current year. A simple working scheme for working the teak areas in Bedadavole reserve, Polavaram Range, was sanctioned by the Conservator. A tentative working scheme was also sanctioned for working a few pole forest coupes in Vatangi reserve, Peddapore Range, so as to provide sufficient data for the preparation of a regular scheme for the Peddapur Range. The prescriptions of the sanctioned working plans were generally adhered to, but for want of demand four fuel coupes in Gokavaram Range and three in Rajahmundry Range, and two fuel and two bamboo coupes in Peddapur Range, remained unsold.

2. Communications and Buildings.

First Circle.

6. *Roads and bridges.*—Rupees 7,929 were spent on new works and Rs. 12,176 on repairs. Much progress was not made under new works as most of the works proposed had to be stopped during the course of the year to reduce expenditure. The existing roads were kept in repair.

7. *Buildings.*—Rupees 73,645 were spent on new works and Rs. 15,185 on repairs. The sawmill buildings at Russellkonda were completed. The other important works that were carried out were :—*Vizagapatam*—Forest lines at Vedurupalli and Regupalem ; *Upper Godavari*—Range quarters at Chintur and Forester's quarters at Tunikicheruvu ; *Lower Godavari.*—Forester's quarters at Mulagalampalli; *Kistna.*—Forest lines at Gollalamoda and Range Office at Bezwada.

8. *Other works.*— A well at Balinkia in Ganjam.

3. Protection of Forests.

(*a*) *General protection.*

9. The following statement compares the number and classification of forest offences reported during the year with those of the preceding year and the average of the three preceding years :—

Cases.	Injury to forests by fire.		Unauthorized felling.		Unauthorized grazing.		Other offences.		Total.		Average for three years ending with 1920-21.
	1920-21.	1921-22.	1920-21.	1921-22.	1920-21.	1921-22.	1920-21.	1921-22.	1920-21.	1921-22	
Cases taken to court.	1	5	301	281	47	73	33	42	382	401	435
Cases compounded.	5	3	829	1,079	203	389	129	67	1,166	1,538	1,477
Cases undetected.	178	266	40	53	6	..	3	7	227	326	181
Total .	184	274	1,170	1,413	256	462	165	116	1,775	2,265	2,093

New cases of the year.—Except under 'other offences' the figures show an increase compared with those of the previous year, the reason for the increase being that the previous year was one of nine months. The cases under 'injury by fire' and 'grazing' show an increase compared with the proportionate figures of last year. The reason in the former is ascribed to the exceptionally dry season which characterized this year.

Cases—old and new—dealt with during the year.—The percentage of cases convicted was slightly less than in the previous year. This was due partly to several cases having been withdrawn after they were taken to court as the accused paid compounding fees in the court. The punishments inflicted by the Magistrates are reported to have been adequate. Beyond the usual notice of warning published in the District Gazettes to the villagers against setting fire to the reserved forest, no other special steps were taken, such as suspension of privileges, closure of reserves to grazing, enhancement of grazing fees and so forth. In *Kistna*, a patrol party, consisting of one forester, two forest guards and two watchers, was appointed in Ellore range in October 1921 and worked till the first week of April 1922. During this period they detected eighteen cases, of which fourteen were compounded, two convicted and two are pending with Sub-Magistrates. The party was disbanded as the importance and number of cases detected did not justify its retention. A similar patrol party which is still working was formed on the same lines in Bezwada range. In *Vizagapatam* two patrol parties of six subordinates each were formed in Narasapatam and Palakonda Ranges. The system is reported not to have worked satisfactorily in Narasapatam Range. There was a good deal of trouble in Bezwada and Ellore Ranges on account of followers of the non-co-operation movement advocating that forest laws should be ignored. Two non-co-operators in Bezwada and one in Ellore Ranges were charged and convicted with imprisonment for periods varying from six to twelve months.

10 Rupees 65 were granted to subordinates and informers as rewards.

(b) Protection from fire.

11. Form 72 shows the area attempted to be protected and that actually protected. Of the total area of 2,256 square miles of reserved forests no fire protection was undertaken in about 15 per cent of the area. Of the area subject to fire protection 14 per cent was burnt. The fires were worst in *Ganjam*. *First Circle.*

In the unprotected area in *Ganjam* there were 48 fires extending over an area of 75 square miles. The fire season was unusually severe and in spite of fire protection works carried out before the fire season started the area burnt was excessive. *Godavari Upper*—The early burning system was introduced in four ranges of this division and 258 square miles of reserves were treated in this way. The results are reported to be satisfactory in Bhadrachellam range as there were no subsequent fires. In the other three ranges the results were not so satisfactory. The remaining area of 327 square miles of reserves was protected under the ordinary system of fire lines.

Taking the circle as a whole the area burnt was 175,731 against 129,138 acres of the previous year.

The average cost of special and general protection was Rs. 11-4-7 per square mile attempted and that of early burning in *Upper Godavari* was Rs. 9-14-11 per square mile. The number and origin of fires are compared in Appendix A.

(c) Protection from cattle.

12. The area open to grazing was 2,064 against 1,996 of the previous year and formed 91·5 per cent of the forests. Goats were excluded from all reserves. The number of cattle impounded showed an increase compared with that of last year and the average of the three preceding years, but last year's figures were for nine months. Viewed proportionately the figures for the two years are more or less the same. In *Upper* and *Lower Godavari* there was an increase in the number of cattle impounded. In *Ganjam* the grazing incidence fell from 6·8 acres in 1920-21 to 7·44 acres in 1921-22. In *Lower Godavari* it fell from 2·63 to 2·98 acres, whereas in *Upper Godavari* it rose from 1·64 to 1·23 acres. In *Vizagapatam* the grazing fees were enhanced from 1st July 1921; some of the cattle in Narasapatam Range were in consequence sent to graze in Mokhasa forests and in the Golgonda Agency.

(d) Protection against injuries from natural causes.

13. Nothing of importance was done.

CHAPTER III.—SYLVICULTURE.

(a) Natural reproduction.

14. In *Ganjam* natural regeneration of sal was good in the clear felled coupes. In *Lower Godavari* the natural regeneration of casuarina in the Kandikuppa plantation is reported to be thriving; some fresh seedlings are reported to have sprung up in the felled areas. In *Lower Godavari* and *Vizagapatam*, including Madgole, *Dendrocalamus strictus* and *Bambusa* continued to seed and die gregariously, but they have not yet started doing so in *Ganjam*. During the year under report both *Dendrocalamus* and *Bambusa* have started dying wholesale in Polavaram Range of *Lower Godavari*. As a rule *Dendrocalamus* is dying before *Bambusa* in *Lower Godavari*.

(b) Artificial reproduction.

15. *Regular plantation.—Godavari Upper*—48 acres were felled in 1920-21 in six different places in four different ranges and treated under the taungya system with the object of raising teak. The results are very poor indeed as there are very few seedlings and the best of those are under eight inches when a year old. Fresh teak seedlings are now germinating and they may do better in the absence of any food crop.

16. *Cultural operations.—Ganjam*—Red sanders in the Napier's Park reserve continued to thrive. In the Rambha Ravine coupe II compartments 16 (*a*) and (*b*) an area of ten acres was planted with *Cedrela toona*, *Pterocarpus marsupium*, *Teak* and *Eugenia jambolana* seedlings raised in nursery beds. A good number of plants were

First Circle.

living up to the end of the year under report. *Vizagapatam*—Sandal was sown in Sanivaram and Dharakonda reserves and teak seed in Busilikota plateau, but both were unsuccessful. It is proposed to sow them again in 1922–23. Numerous attempts have been made for years past to sow sandal in different reserves in *Upper* and *Lower Godavari, Vizagapatam* and *Kistna* but with practically no success. This year the results were equally poor. It is suggested that the combined heat and drought in the plains is too great for this species. Occasionally an isolated tree is found thriving in the compound of some residence.

(*c*) *Operations for improvement of growing stock.*

17. *Ganjam.*—In the plains sal timber working circle cleanings were done in the clear felled coupes felled in the spring of 1921 in both the felling series. Undesirable shoots were, as far as possible, bent and broken by hand, but not severed instead of being cut. This method discourages the production of fresh, fast-growing shoots. Subsidiary operations were carried out in Periodic Block 2 in both felling series and consisted of the removal of mature trees to the Sawmill followed by an improvement felling to favour that portion of the crop which ought, theoretically, to become ripe for the axe during the second period. In felling series I the work is much in arrears owing to the amount of inferior material to be cut out exceeding the demand.

Thinnings.—A thinning was carried out in two adjacent one-acre plots in which the re-growth was five years old. These plots which are in Suradevi block of Galleri reserve were originally observation plots for studying the best method of regenerating the forests. Mr. Wimbush reports:—"Within a few weeks of the completion of the thinnings it was noticed that serious damage was occurring to the saplings left standing. The damage consisted of the partial girdling by white ants of a very large percentage of the saplings usually within two feet of ground level. Available evidence points to there having been no fire in the area since the new crop came into existence."

In the ravine working circle cleanings and subsidiary operations on the lines described above in connexion with the plains sal timber working circle were carried out in the Ghogodo reserve of Bontha Range. The operations are falling considerably in arrears owing to the difficulty of extracting timber from so remote a locality. From the Kalimaba reserve of Russellkonda Range dead sal poles were extracted and auctioned. From the various reserves of Mojjogoda Range a large number of dead and wind-fallen trees were converted into logs and carted to the Sawmill.

Upper Godavari.—Improvement fellings were carried out over fifty acres in Tunikicheruvu reserve and over fifty acres in Seetharampuram reserve. The operation consisted of removing all the useless and crooked trees and those that were interfering with the growth of the more valuable species. These areas were also freed from climbers.

CHAPTER IV.—EXPLOITATION.

(*a*) *System of management.*

(i) MAJOR PRODUCE

18. The different silvicultural systems in force were:—

Clear or regeneration fellings.—These were carried out in *Ganjam* in the two felling series of the plains sal timber working circle and also in the ravine working circle as prescribed in the working plan. Fifty-seven thousand six hundred and eight cubic feet were extracted. Thirty-eight acres of Kandikuppa casuarina plantations in *Godavari Lower* and 1,791 acres in *Kistna* were felled. One coupe of twenty acres was clear felled departmentally in Tunikicheruvu reserve of Bhadrachalam Range and another of twenty acres in Ramachandram reserve of Marrigudem Range. After extracting the saleable poles, the refuse collected in heaps was burnt. Teak seeds were then sown. The average cost of the whole operation, including carting for a short distance, was Rs. 33–9–7 per acre. The cost of burning in Marrigudem Range was excessive. The net profit on the Marrigudem coupe was Rs. 20–1–0 per acre and that on the Bhadrachellam coupe is likely to be not less than Rs. 31, but the produce has not yet been sold. These are the first clear fellings made in *Upper Godavari.* The areas dealt with contained a fair percentage of inferior teak, but the

growth is never likely to be good enough to be treated under any high forest system. In a couple of years time it should be possible to get contractors to work similar but larger coupes in these two ranges. *First Circle.*

Selection fellings.—Ganjam—In the selection fellings area in Dhimirijoli reserve a small timber slide was constructed at a cost of Rs. 50. Several hundred logs were brought down it at a cost of about one anna per cubic foot. Without the slide it is doubtful whether the timber would have been extracted as a preliminary attempt to trace a line for a cart-track showed that the construction of such a track would be very difficult and also very costly. Two thousand and twenty-nine logs of 28,236 cubic feet were extracted in the current year. These, together with 500 logs of 9,720 cubic feet, being the balance of last year's fellings, were carted to the Russellkonda depot. *Godavari Upper*—These fellings were confined to the unreserved lands under the control of the Forest Department and trees of and above the prescribed minimum girth were felled. Five hundred and thirty-three logs of 11,150 cubic feet were extracted. The coupes in Nugur, Bhadrachellam, Pulusumamidi and Lakkavaram ranges were not worked this year as the timber felled in the previous year's coupes was not sold.

Improvement fellings.—These were carried out on fifty acres in Tunikicheruvu reserve and fifty acres in Seetharampuram reserve of Bhadrachellam and Marrigudem Ranges respectively. Four hundred and twenty-two cubic feet of timber were extracted and sold for Rs. 990.

Simple coppice and coppice with standards.—The fuel coupes in all the divisions were worked under these systems.

Unregulated fellings.—These were as usual confined to unreserved lands and to the Rampa forests. In *Ganjam* permits for classified timber from unreserves continued to be issued on payment of seigniorage fees. The demand, however, was not great.

(ii) Minor Produce.

19. *Bamboos and miscellaneous produce.*—Three methods of extraction were in vogue, viz., departmental collection, leasing the right of collection and collection on permits. The first method was resorted to only to meet the petty requirements of the department for repairs to rest-houses, etc. Bamboos and other important produce, including tanning barks, were leased out to contractors. The right to collect seigniorage from purchasers at certain shandies for minor produce purchased from hill tribes was leased in *Vizagapatam.*

Permits were given for extraction of all produce from the Agency tracts in *Godavari Lower* and from some of the forests in the *Upper division* which were not leased out.

Strychnos Nux-vomica.—Ganjam and *Kistna*—The three-year lease was cancelled as the lessees failed to pay the instalments. In *Vizagapatam* and the two *Godavaris* the produce was sold for one year.

Fodder grass and hay.—Ganjam.—The right to cut grass in Napier's Park reserve was leased out. In *Godavari Lower* the removal of fodder and thatch grass was allowed on permits as usual. The right to cut grass in the Cantonment ground at Samalkot was leased. *Kistna*—The Military Department continued to make hay on payment of a royalty of Rs. 2 per ton. The collection of fodder grass from the closed areas was leased out.

(b) Agency of exploitation.

(i) Departmental Agency.

20. The outturn of major produce by departmental agency is compared below with that of last year :—

—	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos.	Minor produce.
			Rs.	Rs.
1920-21	420	245	405	876
1921-22	240	182	620	972

First Circle.

The quantity of major produce exploited was 10·06 per cent of the total outturn and chiefly consisted of timber felled in *Ganjam* for the Sawmill and the outturn from selection fellings in *Upper Godavari*. The decrease under timber was due in *Ganjam* to the greater number of dead sal poles cut last year and in *Upper Godavari* to the non-working of coupes in four ranges as the timber extracted in them last year remained unsold. The decrease under fuel was due to no departmental thinnings in *Ganjam*.

(ii) By Purchasers.

21. The clear and improvement fellings referred to in paragraph 18 supra and the fellings in fuel coupes, were carried out by contractors except in the case of timber for the Sawmill in *Ganjam*.

The quantity of major produce and the value of minor produce removed by purchasers during the year are compared with those of the preceding year in the following abstract:—

—	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos.	Grass and grazing.	Other minor produce.
			Rs.	Rs.	Rs.
1920-21	478	2,733	1,11,766	46,856	63,171
1921-22	398	3,207	85,390	52,232	72,612

The decrease under timber was due to less removals of timber from unreserves in *Lower Godavari* owing to the enhancement of seigniorage rates. The decrease under bamboos was due to an abnormal demand for sugarcane props in the previous year. The slight increases under other heads were due to the fact that the figures of last year represented only nine months.

(iii) and (iv) *By right holders and under privileges and free grants.*

22. The quantity and value of forest produce removed under this head were as follow:—

—	Timber in thousands of cubic feet.	Value	Fuel in thousands of cubic feet.	Value.	Bamboos.	Grazing.	Other minor produce.	Total outturn.
		Rs.		Rs.	Rs.	Rs	Rs.	Rs.
Right holders	..	..	..	..	..	592	500	1,092
Free grantees	87	4,696	81	852	351	11,781	64	17,744

Rights.—The Khonds in *Ganjam* were granted concessions in the shape of building material and free grazing for services rendered by them in fire protection and general protection of forests. The estimated value of the produce enjoyed was Rs. 1,092 against Rs. 4,040 in the previous year.

Free grants.—Such grants were made to the villagers chiefly for rebuilding their houses destroyed by fire. The estimated value of all grants was Rs. 17,744 against Rs. 14,934 of the previous year.

(c) *Outturn and sources of forest produce.*

23. The total outturn from all classes of forests from all agencies is compared with similar details of last year in the following statement:—

—	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos.	Gross value of minor produce including grass and grazing.
			Rs.	Rs.
1920-21	1,001	3,074	1,12,461	1,24,160
1921-22	725	3,470	86,361	1,38,751

The total number of cattle for which grazing was provided was 269,400 against 263,611 in the previous year.

CHAPTER V.—FINANCIAL RESULTS.

First Circle.

24. The financial position of the year is compared with that of the previous year and the average of the preceding quinquennium in the following abstract :—

—	1921-22.	1920-21.	Average of the previous quinquennium.
	Rs.	Rs.	Rs.
Revenue	4,15,052	4,11,475	4,76,493
Expenditure.			
A.—Conservancy and works	4,74,914	2,43,771	1,49,689
B.—Establishments	3,96,125	2,79,061	2,62,931
Total ..	8,71,039	5,22,832	4,12,620
Surplus ..	— 4,55,987	— 1,11,357	+ 63,873

The results show a deficit of over 4½ lakhs of rupees. Most of it occurred in *Ganjam*. The Saw mill at Russellkonda started working only at the close of the year, so no revenue from timber could be realized within the year. Rupees 2,28,459 of the deficit represent the cost of Saw mill machinery adjusted by the Accountant-General in the March 1922 final accounts of this Circle.

40·80 per cent of the revenue was derived from major produce, 38·32 per cent from minor produce, 12·28 per cent from grass and grazing, and 8·60 per cent from miscellaneous items. Of the expenditure 46·50 per cent was spent on the exploitation of forests, 24·95 per cent on their upkeep and improvement and 28·55 per cent on miscellaneous items. The revenue outstanding at the end of the year was Rs. 11,981, of which Rs. 10,133 fell due within the year.

The estimated value of the produce at sale depots was Rs. 141. The important variations under ' revenue ' and ' expenditure ' are explained below.

Receipts.

(*i*) *By departmental Agency.*

Timber + 5,087.—The increase was in *Upper Godavari* due to revenue from timber sold to Public Works Department and from clear fellings in Manigudem range.

(ii) *By purchasers.*

Timber — 9,714.—The decrease was in *Ganjam* and *Lower Godavari*. In the former it was due to the windfallen trees in Mojjagoda Range being worked departmentally instead of being sold to contractors and in the latter it was due to less demand for timber from unreserves as the seigniorage rates were enhanced during the year.

Bamboos — 22,952.—The decrease occurred in the two *Godavari* divisions and was chiefly due to the abnormal demand for sugarcane crops in the previous year.

Grass and grazing + 5,356.—Partly due to increased grazing fees in the plains of *Vizagapatam* and to the fact that the previous year's revenue dealt with only nine months.

	Rs.	
Minor produce	+ 14,593	Due to twelve months' figures dealt with against nine months in the previous year
(iii) Miscellaneous (including confiscated drift and waifwood).	+ 9,199	
Expenditure—		
		Rs.
A. Conservancy and works		+ 2,31,143
B. Establishments		+ 1,17,064

The increase under " A. Conservancy and Works " was *chiefly due to the debit under A VI (c) of the cost of Saw mill machinery referred to in the commencement of this chapter*. The increase under " B. Establishments " was due to increased rates of salaries and travelling allowances. Moreover the figures under review relate to twelve months against nine months of the previous year.

CHAPTER VI.—RESEARCH AND EXPERIMENTS.

First Circle.

25. *Research.*—Nil.

26. *Experiments.*—In *Ganjam* the experiments in connexion with seasoning timbers which had been in progress at Russellkonda for over two years under the auspices of the Forest Research Institute, Dehra Dun, were completed. The seasoning expert from Dehra Dun, accompanied by the Burma Seasoning Officer, examined the timber in January 1922 and recorded the facts and information required, but no report on the final results has yet been published.

CHAPTER VII.—ADMINISTRATION.

27. *Tours.*—The charge of the circle was held by—

Mr. J. S. Scot till 14th April 1921.

Mr. A. Wimbush from 15th April 1921 to 25th May 1921.

Mr. D. T. Barry from 26th May 1921 to 7th December 1921.

Mr. H. C. Bennett from 8th December 1921 to end of the year.

All the the District Forest Officers except *Upper* and *Lower Godavari* did more than the prescribed minimum of touring during the year. The short touring in *Upper* and *Lower Godavari* was due to the frequent changes of officers and the illness of Mr. Rigold.

The Chief Conservator and the Conservator of Forests visited Russellkonda. The buildings in connexion with the Saw mill at Russellkonda were completed and the Saw mill commenced its work. The Board of Control was inaugurated and met for the first time at Russellkonda in February 1922.

28. *Inspections.*—The Conservator inspected all the District Forest offices and found them in good order. Some of the forests in *Vizagapatam* and *Upper* and *Lower Godavari* were inspected by Mr. D. T. Barry and some of those in *Kistna* by Mr. H. C. Bennett. Inspection notes on the above forests were written.

29. *List of offices audited.*—All the offices except *Upper Godavari* were inspected by the Local Fund staff of the Accountant-General's office with satisfactory results.

30. *Vernacular Training School.*—The school was held in *Ganjam* for the fifth time and 35 subordinates were trained, of whom five were from Bihar and Orissa. The school lasted from 6th January 1922 to 18th June 1922. The school was inspected by the Chief Conservator. It was also inspected once by Mr. H. C. Bennett and once by Mr. D. T. Barry. The health, discipline and instruction were found satisfactory.

31. *Health of the establishment including an account of measures of sanitation and casualties.*—*Upper Godavari* and some of the Agency portions of the other divisions continued to be unhealthy. Three subordinates died of fever, twenty went on sick leave and one Assistant Conservator, Mr. O. H. C. Shelswell, was invalided Home on account of malaria contracted in Balinkia.

CHAPTER VIII.—GENERAL.

32. *Formation and management of Panchayats (to include Forest Village System).*—In *Kistna* the three reserves referred to in last year's report continued to be under panchayat management. The District Forest Officer reports that he inspected them in January 1922 and found signs of goat browsing in some and overgrazing in all the reserves, that lines and cairns were being neglected and there was practically no check on the removal of fuel, etc. No panchayats were in existence in the other divisions.

The Forest Village System is not in force in this Circle.

33. *Measures for improving local supplies and facilities (includes water supply, fuel, manure leaves, etc.).*—*Ganjam*—Permission was given to the ryots of Singapur to keep the bund on the west of Pendura Bandho on Malati reserve line in good repair so as to divert water into Pendura Ghai and prevent damage to the Berhampore-Kalingia road near mile 36/4. Lakshmana Gonda of Hariharasai village was permitted to construct a well beside Kurlangi-Gangupur cart track (which was admitted

as a right of way inside Dhumi Dhumi reserve) on condition that the well should be free to all who use the right of way. Permission was granted to Kapila Majhi of Palasupalli to construct a tank not more than half an acre in extent near the place which adjoins the reserve line in the north-eastern block of Dhumi Dhumi reserve on condition that no damage is done to the tree growth and that free access to the water of the tank is allowed to cattle, having permits to graze in Dhumi Dhumi reserve. *Vizagapatam*—There is scarcity of water in the Busilikota plateau and it is proposed to sink a well here for the use of settlers, cattle and wayfarers. A trial pit was dug at a cost of Rs. 20 and a well and masonry reservoir is proposed to be constructed in 1922-23. *Kistna*—The spring near Dongamarlabhavi in Kondapalli reserved forest and Veerankuta tank in Ellore Range were repaired. Permission was granted to private persons for digging two tanks in Nachugunta Block II on the express condition that they have no claim for the tank, but work had not commenced for want of labour. *First Circle.*

The wants of people in the matter of fuel were fully met in all the divisions and there were no complaints. There was scarcity for fodder in Sarvasidhi and Narasapatam Ranges of Vizagapatam and free cutting and removal of grass was permitted temporarily in Madalammakonda, Karaka, Arlova and Pedimikonda, Dharakonda and Sarugudu reserves until the monsoon broke. There was no demand for manure leaf from the forests of the circle.

34. *Timber transit rules.*—The rules are reported to be working satisfactorily on the whole, but proposals to modify the Rampa transit rules have been submitted to the Chief Conservator. A considerable number of tana stations in *Lower Gōdāvari*, *Vizagapatam* and *Kistna* were considered unnecessary and abolished.

35. *Jungle tribes.*—These are found in all the divisions except *Kistna*. The District Forest Officer, *Ganjam*, reports :—" The Department continued to be on very good terms with the Khonds. It was found that in recent years the latter had begun to look upon the concessions allowed to them by the department as rights. It was necessary to correct this mistaken impression more especially as the fire season of 1921 was a disastrous one. Accordingly, instead of allowing unlimited free grazing to the Khonds, orders were issued that no individual should be allowed to graze more than six cattle free of charge, the supposition being that anyone owning more cattle than this could well afford to pay a small grazing fee. This order and the consequent explanations of the position to such of the Khonds as expressed surprise at it had a salutary effect."

Vizagapatam—The hill tribes availed themselves of the privileges conferred upon them without complaint. One or two were selected from among them and appointed Forest Guards. The long contemplated Busilikota settlement was formed during the year and 25 families settled in it. Two hundred acres of forest land were set apart for them and the settlers have constructed houses at the place and cultivated 100 acres during the year.

The *Koyas* and *Reddis* of the *Gōdāvari* divisions continued to be serviceable as usual. They were employed on the general fire protection of forests as well as on the construction of roads and buildings, on demarcation works, etc. They were granted rewards in addition to the usual wages for the successful protection of forests from fire and were also allowed the concession of free grazing and free removal of forest produce for their domestic and agricultural requirements.

36. *Mining and quarrying.*—Rupees 1,230 were realized from quarrying rough stone in the reserves and unreserves of *Kistna*.

37. *Live stock—Elephants.*—There were two baggage elephants in *Upper Gōdāvari* one of which, viz., ' Surat Pari ' developed an abscess on the knee-cap of the left hind leg in July 1921 and had to be kept at the Bhadrachallam Veterinary Hospital under treatment for five months before she was fit for work again. The other elephant was in good condition.

Other animals.—These exist only in *Ganjam*. The year opened with 47 buffaloes and six bullocks. Fifteen buffaloes were purchased during the year. Ten buffaloes and one bullock died and eight buffaloes and five bullocks were transferred to the Sawmill. The balance at the end of the year was 44 buffaloes. These are used for dragging and carting timber.

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38. *Veterinary establishment.*—Nil.

39. *Tigers.*—A man-eating tiger has been roaming about Kaliamba and Tiliki reserves of *Ganjām* and has killed a few people in the neighbouring villages. The Board has since offered a reward of Rs. 150 for its destruction.

40. *Civil suits.*—Of the three pending suits referred to in the last year's report, the first (driftwood appeal case) was decided in favour of Government and the third (for recovery of seigniorage on metal and gravel quarried) against Government. The second (a boundary case) was still pending disposal in the Court of the Agency Commissioner, Waltair. A fresh suit was filed against a defaulting contractor in *Vizagapatam* for recovery of loss due to re-sale of coupe and was decided in favour of Government. The decree is pending execution. Another civil suit of small importance was brought against Government and is pending disposal in the principal District Munsif's Court, Ellore.

41. *Control of unreserved lands by the Forest Department.*—In *Ganjam*, the Revenue and Forest Departments are jointly responsible for protection of the unreserves. The District Forest Officer reports that 'the usual disadvantages of dual control are not absent, but, considering the vast area of unreserves, no better arrangement is obvious and the results on the whole are fair.' In *Upper Godavari* the unreserved lands are under the control of the Forest Department and the local supply of timber, fuel, etc., is met from these lands Timber of prescribed dimensions is extracted under definite sanctioned schemes and sold in auction.

D. T. BARRY,
Acting Conservator of Forests, First Circle.

29th July 1922.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1922.

SECOND CIRCLE.

CHAPTER I—CONSTITUTION OF STATE FORESTS.

1. ALTERATION IN AREA.

Reserved forests.—An area of 49 acres was added and 9,600 acres excluded in the year under report. The addition was the outcome of final settlement of the enclosures in Bellary and Guntūr districts which were referred to in the previous year's report, and the exclusion was due to the disforestation of (1) 2,658 acres in Bellary, (2) 6,631 acres in Guntūr, (3) 257 acres in Kurnool South and (4) 37 acres in Kurnool West, and to the reduction of 17 acres in the area of Tummala reserve of Anantapur district owing to the revision of the boundary of that reserve in order to exclude some patta lands. The disforestation in all cases was for the purpose of throwing open lands fit for cultivation except in West Kurnool, where out of the 37 acres, 4 acres near Honkaram were disforested for the use of pilgrims visiting Srisailam shrine during Sivarathri festival and the remaining 33 acres in Veldurti reserve were disforested in order to afford a larger area of unreserved land for the grazing of village cattle. These alterations resulted in a total reduction of 16 square miles; thus the area at the end of the year was 4,687 square miles against 4,703 square miles at its commencement. *Second Circle.*

2. *Reserved lands.*—Thirty-eight acres in Mutukur Extension No. 4 Reserve of Guntūr district were added during the year.

Forty-nine acres of reserved land in Bellary and Guntūr districts having been constituted reserved forests, the total area of reserved land at the end of the year was 2·96 square miles against 3·0045 square miles, at its commencement.

2. FOREST SETTLEMENT.

3. The settlement of 49 acres being the area of three enclosures in Bellary and one in Guntūr, reported as having been under progress in the previous year, was completed.

The Daroji foreshore of 1,853 acres was in progress of settlement and is reported to have been finally settled since.

3. DEMARCATION.

4. Five miles of line between the disforested and existing reserves in Bellary were temporarily demarcated at a cost of Rs. 74. Fifty-six and a half miles in Bellary and 13½ miles in Guntūr were permanently demarcated at a cost of Rs. 2,925 and Rs. 231 respectively. Twelve and a half miles of frontier boundary between British and Sandur State in Bellary were demarcated at a cost of Rs. 61.

Four thousand nine hundred and thirty-six miles of boundary in all districts were maintained by the departmental subordinates. Forty-five miles were re-cleared by panchayatdars in *Kurnool East* and 140 miles in *Anantapur* and the three *Kurnool* divisions were repaired at a total cost of Rs. 829

4. Forest Surveys.

Second Circle.

5. (*a*) Sixteen reserves aggregating 185·50 square miles in *West Kurnool* and five reserves of 61·79 square miles in *South Kurnool* were surveyed by the Survey of India Department, of which 5·96 square miles of Dudyala reserve in *West Kurnool* was on the 1″ = one mile scale, and the rest of the areas in the two divisions was on the 2″ = one mile scale. The value of the areas surveyed and the method adopted is the same as that given in the previous year's report. As in the previous year the surveys were classed as ordinary and not paid for by the Forest department. *

(*b*) In *Bellary*, the survey of a portion of the disforested areas and rectification of frontier boundary lines was done by the departmental subordinates at a cost of Rs. 105. Local Forest officers as in the previous year surveyed coupes, enclosures and other minor items.

(*c*) The reference and other maps referred to in section 80 of the Code were maintained in all districts with the exception of range reference maps in *South Kurnool* where materials are being collected for completing their posting.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. Regulation of Management.

(*a*) *Preparation and Control of Regular Working Plans.*

(i) preparation

6. A simple working plan for the Daroji tank bed reserved land submitted by the District Forest Officer, Bellary, has been returned for revision. Its completion is soon expected.

The revised prescriptions of the working plan for Madakasira range of *Anantapur* district were sanctioned during the year by the Chief Conservator of Forests. The revision of the plan for Gooty range has not yet been completed.

In *Guntūr*, the preparation of a working plan for Venkatayapalem timber forest, was taken up by the Probationary Extra Assistant Conservator M.R.Ry. S. Ramaswami Ayyar, but could not be progressed with, as his services had to be directed in combating the non-co-operation movement.

In *East Kurnool*, a preliminary working scheme for supply of small timber and agricultural implements to the villagers in Cumbam range, was drawn up and approved by the Conservator, the method of treatment prescribed being "simple coppice."

In *West Kurnool*, a new scheme for the working of Gazulapalli reserve was drawn up and approved by the Conservator. The scheme consists in the division of the reserve into two felling series each to be worked on a rotation of 40 years, the size of the coupes being 50 acres each. Coupes will be clear-felled and "Kumaried" the following season. Forest species will be raised with field crops. The patch of sandal existing, probably as the result of sowing in the past, in one of the series, will be tended, and fresh sandal seeds sown in the other, where there is no sandal at present.

The plan for Yerramalais and the Terai portions of Nallamalais require revision. Experiments on a small scale are being conducted to test the best methods of regeneration for these forests. The plan for Gundlabrahmeswaram plateau is kept in abeyance as its working did not bring about the desired results in regeneration and here also experiments are being undertaken with the object of discovering the cheapest and most effective methods of inducing regeneration.

(ii) Control.

In *Bellary*, the prescriptions of the plans were generally adhered to, except that some of the coupes in the Adoni and Harpanahalli working plans could not be sold and worked for want of demand, and that the grazing prescriptions had to be deviated from, on account of drought and consequent scarcity of fodder.

In *Anantapur*, the working plans were in force.

In *Guntūr*, the existing plans were in force, except that for Guntūr babul areas wherein the tree-growth is being rapidly cleared prior to being handed over to the Revenue department for assignment to ex-sepoys, depressed classes, etc. . . . Three coupes of 178 acres in Kondavid reserve and one coupe of 111 acres in Takkellapad reserve, were not sold for want of demand. In Repalle mangrove reserves, out of seven coupes of 577 acres, only two measuring 102 acres were sold and there was no demand for the others. In the Bollapalle and Guttikonda block II, the full number of coupes prescribed could not be sold and the area sold was not fully worked for lack of demand. *Second Circle.*

In *East Kurnool*, the prescriptions of the plan for Gudem range were adhered to, so far as bamboo fellings were concerned.

In *South Kurnool*, as the revision of the Cwk range plan has not been taken up pending the formation of the fourth division, the bamboos and minor produce were worked under the old prescriptions.

In *West Kurnool*, the interim working scheme for the Veldurti reserve was put into operation, coupes I and II were thinned and cultural operations were conducted in some of the blank areas.

2. Communications and Buildings.

(*a*) *Roads and bridges.*

7. Rupees 5,574 were spent in the year on the construction of twenty-five miles and seven furlongs of new communications against Rs. 2,335 for twenty-seven miles spent in the previous year (of 9 months). The higher rate per mile this year is due to the construction of more pucca roads.

The Chief works done were—

Roads.	Distance.		Amount.
	MILES.	FURLONGS.	RS.
In East Kurnool—			
(1) Regatikunta–Katamraju road (completed).	2	3	428
(2) Narthadikala–Guttalachenu road (in progress)	3	5	1,183
(3) Regatikunta–Eguvacherlapalli road, part (in progress).	0	6	360
In South Kurnool—			
(1) Perikalapenta–Obulesunipenta road ...	1	1	1,562
(2) Connecting Buggy road to Eber Hardie road.	4	3	1,000

The other works consisted of alignment for new roads and construction of bridle-paths and conversion of working circle lines into bridle-paths. One hundred and sixty-six and a half miles of the existing communications were repaired and maintained at a cost of Rs. 13,118 against 148 miles for Rs. 10,207 in the previous year. As in the previous year contributions of Rs. 1,050, Rs. 2,200 and Rs. 650 were contributed to the Local Fund department for the maintenance of roads passing through reserves in *Kurnool East*, *South* and *West* divisions respectively.

(*b*) *Rivers*—Nil.

(*c*) *Buildings.*

The total amount expended on the construction of new buildings was Rs. 11,753 and that on maintenance and repairs was Rs. 12,724 as against Rs. 12,139 and Rs. 11,039 respectively in the previous year.

The following were the chief buildings constructed—

In Bellary—
Construction of Range office at Kudligi ... ... (In progress)
In Anantapur—
Construction of Range office at Gooty ... ... (Completed)
In Guntūr—
Construction of subordinates' quarters at Remidicherla ... (In progress)

Second Circle.

In Kurnool East—

(1) Construction of a rest-house at Eguvacherlopalli in Markapur range. (Completed)

(2) Construction of foresters' quarters and shop at Guttalachenu in Morricheruvu range. (In progress)

(3) Construction of a rest-house at Yerragondapalem ... (Do.)

In Kurnool South—

(1) Construction of a rest-house at Obulesunipenta in Gundlakamma range. (Do.)

(2) Construction of a kitchen to the rest-house at Diguvametta. (Do.)

(3) Construction of a compound wall to the Range office and quarters at Giddalore. (Completed)

In Kurnool West—

(1) Construction of a kitchen to outhouses at Pecheruvu ... (Do.)

(2) Construction of a kitchen and stables to Range quarters at Atmakur. (In progress)

(3) Improvements to Range Officer's quarters at Dhone ... (Do.)

(d) Miscellaneous.

Rupees 2,649 and Rs. 161 were spent on new works and repairs as against Rs. 1,488 and Rs. 1,097 respectively in 1920–21. The expenditure was all on construction and repairs of wells, and digging of trial pits for wells.

3. Protection of Forests.

(a) General Protection.

8. The total number of new cases for the year was 4,524. As the cases of last year cover a period of nine months, useful comparison cannot be made. The average, however, for nine months of the year comes to 3,393 showing a decrease of 32 per cent as compared with last year's figures. The decrease was due to the helplessness of the subordinates in *Guntūr* to detect cases and also their fear to report them even when detected, on account of lawlessness of the people and the disturbed state of the district, in consequence of the activities of the non-co-operation movement, and to allowing free grazing in *Bellary* and *Kurnool* divisions.

The number of cases taken to court was 2,131, of which convictions were obtained in 1,559, and 179 acquitted. The percentage of acquittals was 8·4, and 393 cases were pending disposal by court.

The number of cases offered to be compounded in the several districts of the circle was 3,841, of which 2,634 were actually compounded, 671 withdrawn and 536 pending at close of the year. The amount of compounding fees realized was Rs. 36,108.

The total number of cases pending at close of the year was 929 against 1,671 at its commencement.

The accused in the case of murder of a forest guard in Anantapur district referred to in last year's report were acquitted in the Sessions Court for want of sufficient evidence. The widow of the forest guard was, however, granted by Government a pension of Rs. 8 per mensem. Fifty-eight cases of assault on forest officials occurred in Guntūr, and the usual mob violence was resorted to when Forest laws were enforced by isolated subordinates. To quell this lawlessness and the organized social boycott of Forest officers, the protective staff was concentrated into one large party for each range.

There were two sensational cases of forced rescue of cattle found illicitly grazing in reserves and of assault of subordinates. On account of this state of affairs, punitive police were appointed by Government. In one case 40 men were arrested, of which 19 were subsequently sentenced to terms of imprisonment varying from 3 to 6 months besides a total fine of Rs. 4,000 ; in another, after repeated warnings against the violence of rioters, the police had no alternative but to open fire. Two of the rioters and the syce of the Sub-Inspector who had got mixed up in the crowd were killed. Thirty-seven arrests were made and the case is under trial. The effect was on the whole salutory resulting in the payment of grazing fees. A Special Magistrate was appointed temporarily for the more prompt disposal of forest offences in

this district, and punitive police, with motor transport, under the control of Mr. Kaye, Assistant Superintendent of Police, to work in co-operation with the Assistant Conservator of Forests, Mr. Connoly, were posted to the Palnad to enforce obedience to Forest laws. *Second Circle.*

Punishments awarded by Magistrates were generally adequate in all divisions, except in *Guntūr*. Leniency of punishments in *Guntūr* was brought to the notice of the District Magistrate, who took necessary action in the matter.

Rewards to subordinates for detection of offences in deserving cases to the extent of Rs. 240 in *Anantapur* and *Guntūr* districts were sanctioned by the Conservator.

(b) Protection from fire.

As per orders now in force the area under *General Protection*, *Special Protection*, and *Early Burning*, shown in Form No. 72 covers a period of only nine months from April to December. This prevents a satisfactory comparison of the results of fire-protection in this and the previous year. The total area attempted in the circle under the three systems (Special Protection, General Protection and Early Burning) amounts to 2,767,186 acres or 4,324 square miles, of which 20,538 acres or 32 square miles were burnt. In the area of 353,740 acres under Special Protection in all the districts and of 765,626 acres under Early Burning (confined to the *three Kurnool* divisions), 7,244 acres and 7,953 acres respectively were burnt. The percentage of acres burnt to area attempted under Special Protection and Early Burning in the three Kurnool divisions, are 3·2 and 1·3 respectively, which points to the conclusion that the latter system is more effective in its results than the former.

In *East Kurnool* 15,596 acres kept under Special Protection in the previous year, was transferred to General Protection, as fire lines were not cleared, as there was no necessity for it, owing to absence of grass, the heavily grassed area having been taken up for Early Burning.

The total expenditure on fire-protection operations in the period under report is Rs. 11,426.

(c) Protection against cattle.

Three thousand four hundred and sixty-one square miles for the whole year were thrown open to grazing for all animals except goats, and 866 square miles were closed to all animals in all divisions of the circle. In *Bellary* and *Anantapur*, areas proposed to be closed, were thrown open to grazing on permits, for part of the year, and subsequently to free grazing, owing to scarcity of fodder due to the failure of monsoons. In *Guntūr*, all forests which were notified for closure were thrown open for cattle, except goats, as a temporary measure to realize the grazing revenue. In *Kurnool East*, the whole division was thrown open, except to goats, owing to the failure of monsoons, and in *Kurnool South* an area of 3,300 acres, of the area notified for closure was also thrown open in Cumbum reserve of Gundlakamma range.

The number of cattle impounded is 54,243 against 52,476 in the previous year, resulting in an increase of 1,767, which was contributed by *Bellary*, *Anantapur* and *Kurnool West* divisions. In the first and the last named divisions, the increase is attributed to scarcity of fodder outside the reserved areas owing to drought, and to some extent to non-co-operation propaganda.

(d) Protection against injuries from natural causes.

There is nothing to report under this head.

CHAPTER III—SYLVICULTURE.

(a) Natural reproduction.

9. Sandal is spreading in Adoni reserve of *Bellary* district, and in all the reserves of Madakasira range, and in the Amagondapalayam reserve of Bukkapatnam range, of *Anantapur* district, and also to some extent in Sivapuram extension in Kudligi range of *Bellary* division.

In the western taluks of Bellary, *Hardwikia binata* regeneration is fairly good, but it is very poor in *Guntūr* and *Kurnool* districts. In *Guntūr* the regeneration of Mangrove was satisfactory on the coast, and coppice shoots in the felled

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coupes were fairly good. In *West Kurnool*, yegi (*Pterocarpus Marsupium*) in the Terai portions of Nallamalais, rosewood (*Dalbergia latifolia*), and *Terminalia Tomentosa* in the plateau portions of Nandyal and Gundlabrahmeswaram ranges and *Chloroxylon swietania* in Guvvala Kunta block of Sivapuram range regenerated fairly satisfactorily.

(*b*) *Artificial reproduction.*

Fresh plantations were not started in any district.

The existing three plantations in Bellary are reported to be thriving. In *Guntūr*, the lease for one area of 288 acres, which had been granted for cultivation on condition that *Casuarina* and *Cashew* plantations were raised, was surrendered by the lessee; but on another similar area of about 300 acres the operations of the lessee, who lives close to the reserve, were very successful. Consequently many applications are now being received for the grant of such areas for cultivation, the understanding being that plantations should be raised.

In *East Kurnool* division, 800 teak seedlings were raised at Chinnamantrala in the emergency coupe but only 25 per cent of them survived at the end of the year. Fresh nurseries were opened in three other reserves to raise teak seedlings.

(*c*) *Cultural operations.*

Acacia sundra, *Hardwickia binata* and *Santalum album* were dibbled in Somalapuram and the sandalwood reserves of Jettinakatta and Chilkanahatti of *Bellary* district. The operation was fairly successful in Somalapuram while in other places it was a failure.

In *Anantapur*, sandal seeds were dibbled in six reserves, over two acre plots, to an aggregate extent of 28 acres and about 30 per cent of the seedlings germinated and survived the hot weather.

In *East Kurnool*, tangedu sowings were carried out in various emergency coupes and though the seeds germinated satisfactorily, the seedlings perished subsequently on account of the drought. These experiments have now been stopped.

In *Guntur*, six bags of yepi (*Hardwickia binata*) seeds were dibbled in the felled coupes of 1920–21. Fifty per cent of the seeds germinated, but the seedlings nearly all died subsequently. In the Repalle mangrove forests sowing of mangrove seeds as per prescriptions of the working plan was not carried out owing to pressure of other work. So also the operations prescribed in the working plan for Tekkalapad reserve could not be done owing to the opposition of non-co-operators. Sandal-seeds (*Santalum album*) sown in Kondavid and Remedicherla did not germinate.

In *South Kurnool*, red-sanders (*Pterocarpus santalinus*) was sown in seed-beds at Baireni. The seedlings were attacked by insects and were treated with arsenic solution. Six hundred seedlings survived. In Owk extension, Devagudipad and Peapalli reserves, small nurseries were started for red-sanders and 300 seedlings were raised in baskets.

(*d*) *Operations for the improvement of the growing stock.*

In *Guntūr*, timber areas are being walled in to ensure better protection. Seven miles and 28 chains of Bollapalli working plan area were enclosed with stone wall, prickly-pear and aloe-fencing. Climber cutting was done in the coupes to be felled during 1922–23 and two coupes of 169 acres were worked under improvement fellings to secure regeneration of important timber species.

In *East Kurnool*, creepers were cut over 1,122 acres in Gudem range; prickly pear was cut and burnt over 4½ acres at Chintala and Pedda Chama.

In *West Kurnool*, cleaning in seven plantations and thinning in two were done; dead trees were cut out in four plantations and trees marked for thinning felled, and big trees which were interfering with the growth of teak, girdled.

Concentrated fellings are now being started in *Kurnool West* and *South* where two small areas of high forest are being clear-felled. After removal of all saleable timber and bamboos, the remainder of the stuff is burnt, and experiments are being made to regenerate the areas by artificial means.

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CHAPTER IV.—EXPLOITATION.

(a) *System of management.*

(1) Major Forest produce.

10. The total area under working plans during the year was 1,805 square miles and the various sylvicultural systems adopted are as given below :—

Method.	Area in square miles.	Percentage of total area under each method.
1. Clear-felling	13	·72
2. Coppice with standards	55	3·04
3. Improvement fellings	149	8·25
4. Selection	97	5·37
5. Area for which working plans have expired and in which fellings are closed or no definite system is laid down	1,491	82·62
Total ..	1,805	100·00

Besides the above, 89 square miles in *Bellary*, and 54 square miles in *Guntūr* are covered by tentative schemes of working.

The working plans of the three *Kurnool* divisions which have almost all of them expired, require revision.

Clear fellings.—These were adopted in the working of fuel coupes in Adoni Range of *Bellary* district and in Nandyal range of *Kurnool West* district.

Coppice with standard.—This system was largely adopted in *Bellary* and *Kurnool West* districts.

Improvement fellings.—These were carried out in *Kurnool East* district alone.

Selection fellings.—Bamboo coupes in *Kurnool South* were worked under this system.

No definite system laid down.—This was as usual in all districts. The areas are worked either as simple coppice or coppice with standards.

(2) Minor Forest produce.

Except in *East Kurnool* and in the Nallamalais of *West Kurnool* where bamboos and other minor forest produce were collected departmentally through Chenchus, the produce in other districts was leased to contractors.

(b) *Agency of exploitation.* –

(i) Departmental Agency.

Major produce.

In *East* and *West Kurnool*, 91 per cent and 98 per cent, respectively of the total yield of major produce was worked out departmentally through the agency of Chenchus, in order to provide work for them. In *Guntūr* 885 cubic feet of timber was extracted departmentally for repairs to rest-houses and a boat.

In other districts, the small collection of timber and fuel was from clearing lines, and the top ends of trees felled illicitly by forest offenders in reserves.

Minor produce.

In the Nallamalais of *East* and *West Kurnool* divisions, bamboos and other minor forest produce were collected departmentally through the agency of Chenchus for the same reasons explained in the last paragraph.

In *West Kurnool*, owing to the failure of the south-west monsoon, a severe fodder famine was anticipated and under the instructions of the Collector, departmental collection of hay was undertaken and 12½ tons were collected and baled at a cost of Rs. 486. This was subsequently disposed of for Rs. 518 as the season improved and famine was averted.

Second Circle.

(ii) By purchasers.

Major produce.

Except in cases referred to in the above paragraphs, timber and fuel were extracted by contractors who purchased coupes standing.

In *East* and *South Kurnool* divisions, a point worthy of note is that a demand is springing up for soft woods among the merchants of Cumbum, Markapur and Tarulapad for making slates. For this industry 3,420 cubic feet of buruga (*Bombax Malabaricum*) was removed from the reserves of Cumbum range in *East Kurnool*, on a seigniorage of four annas a cubic foot, and 2,995 cubic feet of poliki and buruga logs (*Givotia rottleriformis*, *Sterculia*, and *Bombax Malabaricum*) were removed from *South Kurnool* division. The demand for soft wood will have to be met by systematic working. With this view a coupe has been ordered to be opened and put up for auction.

Minor Forest Produce.

The right to collect nux-vomica seeds in all the districts of the circle was leased to one P. Sreenivasa Rao of Madras; the lease has however been cancelled since the lessee failed to pay the security deposit in time.

The prices fetched for the leases of tangedu (*Cassia auriculata*) bark during the year were low as the market value fell.

The right to make hay from the closed compartments of Bellary range was leased out to contractors.

The military grass farms made hay in the *Bellary*, *Anantapur*, *South and West Kurnool* divisions paying seigniorage to the department at Rs. 2 a ton.

In Kudligi and Adoni ranges of Bellary district, stone quarries in seven reserves were leased.

For grazing, stone, gravel and earth, and other produce, permits were issued.

(iii) By right and privilege holders.

As usual the existing rights are those possessed by the Chenchus of the *Guntūr* and *Kurnool* districts to the usufruct of tamarind trees at a nominal rate, to other minor produce and materials for huts free of charge, and to free grazing. (The value of the latter comes to about Rs. 5,067).

In *Kurnool South*, the trustees of the Ahobilam temple have a right to timber, fuel, bamboos and fibre for the construction of huts for those visiting the temple. The value of the materials utilized under this right is estimated at about Rs. 30.

(iv) By free grantees.

Free grants of timber in *Anantapur* and *Guntūr*, and timber, bamboos, thatch grass and palmyra leaves in the *three Kurnool* divisions were made, mostly for rebuilding of houses destroyed by fire.

In *Guntūr*, free grant of date leaves for the settlers of Jayapuram Industrial Home was made to an estimated value of Rs. 3,659.

he quantity and estimated value of the different kinds of produce removed by right and privilege holders and free grantees are as shown in the subjoined statement:—

—	Timber in thousands of cubic feet.	Value.	Bamboos — number in thousands.	Value.	Value of other minor produce including grass and grazing.	Total.
		Rs.		Rs.	Rs.	Rs.
Right holders ..	..	30	..	..	5,067	5,097
Free grantees ..	20	2,795	15	163	3,689	6,647

N.B.—This excludes the value of the rights and privileges enjoyed by the Chenchus of Guntur and Kurnool divisions.

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(c) *Outturn and Sources of Forest Produce.*

The total outturn from all classes of forests by all agencies is compared with similar details of last year in the following statement :—

	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos.	Gross value of minor produce including grass and grazing.
				RS.
1920-21	482	2,572	54,269	5,37,798
1921-22	580	2,926	47,006	4,23,072

The fall in bamboos occurred on account of the seeding and consequent death of bamboos in *East Kurnool* division.

The fall in grazing and minor produce is caused by allowing free grazing on account of the adverse season in the *three Kurnool* divisions and to the non-co-operation movement in *Guntūr* district.

The quantity of hay extracted by the Military Grass Farms is shown below :—

	TONS.
Bellary	826
Anantapur	143
Kurnool South	362
Kurnool West	900

CHAPTER V.—FINANCIAL RESULTS.

11. The subjoined statement compares the results of the year with those of the previous year and the average of the preceding quinquennium : —

Particulars.	1921-22.	1920-21 (twelve months).	Average of the preceding five years.
	RS.	RS.	RS.
Revenue	6,31,601	8,51,772	9,26,883
Expenditure—			
"A" Conservancy and Works	1,61,743	1,62,865	1,96,173
"B" Establishment ...	4,86,479	3,84,829	2,68,381
Total of "A" and "B"...	6,48,222	5,47,694	4,64,554
Net results ...	—16,621	+3,04,078	+4,62,329

The year under report closed with a net deficit of Rs. 16,621 for the whole circle. The deficit occurred in the *three Kurnool* divisions. There was a surplus of Rs. 1,02,573 in the remaining three divisions of the circle.

During the year the revenue decreased by Rs. 2,20,171 and Rs. 2,95,282 respectively as compared with that of the previous financial year and that of the preceding quinquennial average, and the expenditure increased by Rs. 1,00,528 and Rs. 1,83,668 respectively.

The decrease under Revenue was largely due to a considerable fall in the realization of grazing fees owing to free grazing being allowed on account of the unfavourable nature of the season in almost all divisions, to the non-co-operation movement in the *Guntūr* district, and to the low prices obtained for tangedu bark and general minor produce leases. There was little demand for fuel and bamboo coupes and consequently many coupes remained unsold, and prices obtained for those sold were poor.

Of the revenue—

PER CENT.	
17·1	was derived from major produce.
7·3	do. from bamboos.
33·1	do. from grass and grazing.
26·9	do. from minor forest produce.
15·6	do. from Miscellaneous.
100·0	

Second Circle.

Of the expenditure under "A" Conservancy and Works, 33·3 per cent was spent on exploitation, 58·8 per cent on up-keep and improvements and 7·9 per cent on Miscellaneous items. The revenue outstanding at the close of the year was Rs. 12,464 against Rs. 40,935 in the previous year, of which Rs. 7,589 fell due within the year. The estimated value of timber and other produce at the end of the year at sale depots was Rs. 1,058 against Rs. 921 at the end of the previous year.

The expenditure under "A" Conservancy and Works decreased by Rs. 1,122 which decrease in consideration of the financial stringency calls for no remarks, while there was a considerable rise in expenditure under "B" Establishment owing to the increase in pay and rates of travelling allowance of all ranks.

CHAPTER VI.—RESEARCH AND EXPERIMENTS.

(*a*) *Research.*

12. The following researches were made in *Anantapur* district :—

(1) The bark of a *Cassia auriculata* plant, 15 years old, was sent for analysis to the Research Institute, Dehra Dun, last year It is reported that the bark was found to be quite up to the average and useful for direct tannage.

The results of analysis are as follows :—

	PER CENT.
Tannin absorbed by chrome hide power	18·95
Soluble non-tannins	15·01
Insoluble matter	66·04
	100·00

(2) As per instructions of the Chief Conservator of Forests, samples of soils from the Golla Demonstration area, were sent for analysis to the Government Agricultural Chemist, Coimbatore, who reported that the soils were particularly poor in total and available phosphoric acid and also in organic matter.

(*b*) *Experiments.*

Cassia auriculata in the Golla reserve of Anantapur district.—There were no fresh sowings in the year and it is reported that "the operations were confined to countings in sample plots treated under methods II to V described already in previous reports. The seedlings continue to do well although there are a good many casualties."

The total quantity of rainfall during the year was 26·96 inches against 12·25 inches of the previous year showing that the season was better than the previous year, which is reported to have resulted in better growth.

The countings of seedlings in the one-eighth acre plot of the four methods referred to in the report for 1920–21 are as shown below :—

Method.	Number of seedlings in February 1921.	Number of seedlings in March 1922.	Remarks.
II	573	462	8″ high.
III	8,522	3,568	2′ „
IV	7,443	2,793	3′ 6″ „
V	*20,189	8,104	2′ 9″ „

* Erroneously entered as 6,205 in last year's report.

The countings of seedlings on one-tenth acre sample plots instituted in August and September 1920, and reported on in the Administration Report of the last year are compared below :—

Plot number.	Number of seedlings in February 1921.	Number of seedlings in March 1922.
I	1,681	632
II	368	173
III	1,894	1,825
IV	1,036	1,056
V	1,921	1,324
VI	115	56
VII	197	78
VIII	381	296
IX	157	88

Remarks.—The seedlings are only 18 months old and vary in height from between 6″ and 20″ and are healthy.

Many of the seedlings shed their leaves during the dry period, and the leading shoots withered, but after the rain in October and November some of those that were thought to be dead threw out fresh leaves and branchlets. The most satisfactory method of raising tangedu is found to be sowing broadcast and subsequent ploughing. The density of the crop varies very slightly with the quantity of seed sown above five seers per acre. Plot No. III above was sown with five seers of seed in this manner and cost Rs. 2 per acre. *Second Circle.*

Cassia fistula.—The experiment carried out with a view to arriving at the best age at which the tree should be felled for its bark was continued. Of the 109 trees cut back in the I Block in the year 1919, 18 died and the shoots of the remaining ones are on an average over 10′ in height and 7″ in girth. Of the 271 trees that were cut back in 1920 in Block II, 36 died and the shoots of the remainder are on an average six feet high, with a girth of five inches. In Block III, 445 trees were cut back in November 1921.

From observations it is probable that *Cassia fistula* coppice shoots are ready for exploitation for bark after four years. The trees that were felled in this district during the lease period of 1918, were found fit for exploitation and have in consequence been leased during 1922. This experiment will be given up, as the Kutagulla reserved forest in Kadiri range, wherein it was carried out, is one of the areas earmarked for disforestation.

In *South Kurnool* 31½ lb. of *Boswellia serrata* gum was sent to Forest Economist, Dehra Dun, for distillation of turpentine, and the result is awaited.

In *West Kurnool*, a scheme for thinning the teak plantations has been drawn up based on the information supplied by Mr. Bourne, I.F.S., from the Nilambur plantation records.

The sample plots in the teak plantations at Nagaluty are being maintained.

No other experiments worth mentioning were carried out.

CHAPTER VII.—ADMINISTRATION.

13. The circle comprised the same district charges as last year. The officers who held the circle and the district charges during the period under report are shown hereunder :—

CIRCLE CHARGE.

Name of Officer.	Period.	
	From	*To*
Mr. C. E. C. Fischer	1-4-21	... 1-9-21
Mr. A. B. Jackson	2-9-21	... 31-3-22

DISTRICT CHARGE.

District.	Name of Officer.	Period.	
		From	*To*
Bellary ...	Mr. L. S. Janes	Whole year.	
Anantapur.	Mr. A. B. Myers	Do.	
Guntūr ...	Mr. D. L. Sathe	1- 4-21	... 8-10-21
	Mr. T. Clear	9-10-21	... 31- 3-22
Kurnool, East ...	Mr. D. A. Stracey	Whole year.	
Do. South ...	Mr. H. W. A. Gaudoin	Do.	
Do. West ...	Mr. E. M. Crothers	Do.	

There was no change in the number of range charges, but a proposal to abolish the Adoni range of Bellary district was advocated by me in my inspection note C. No. 716 of 1921, dated 6th December 1921, submitted to the Chief Conservator of Forests.

14. *Tours—Chief Conservator's tour* :—The Chief Conservator visited the *Guntūr* district in January 1922, in connexion with the enquiry into the complaints of the people against the Forest department, but an extended tour in the district was given up owing to the difficulties anticipated on account of the non-co-operation propaganda in the upland taluks. He also made a brief halt at Diguvametta attached to *Kurnool South division* and met the Conservator there.

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Conservator's tour.—The Conservator Mr. C. E. C. Fischer, visited *Guntūr* district in July 1921, in connexion with the agitation against the department. I inspected (1) Adoni range and Rayadrug section in *Bellary* district (2) Tangedu Demonstration area in the Golla reserve and some of the reserves in Kalyandrug range of *Anantapur* district, (3) Sirvel, Chelama and Gundlakamma ranges of *Kurnool South* division and (4) Gundlabrahmeswaram, Pecheruvu and Bairluti ranges in *Kurnool West* division.

I again visited *Anantapur* in December 1921 and discussed with the District Forest Officer the "*Forest conditions of the district*" which resulted in the disforestation of isolated areas for which genuine demand for cultivation existed. I visited *Guntūr* in January 1922 to confer with the Chief Conservator in connexion with the inquiry into forest grievances in the district.

District Forest Officer's tour.—All the District Forest officers spent more than the prescribed minimum period in camp, except the District Forest Officer, Guntūr, who avoided unimportant marches in compliance with the orders of Government in G.O. No. 1149, Finance, dated 19th November 1921.

15. *Inspection.*—All the District Forest offices in the circle were inspected by the Conservator during the year and the result was generally satisfactory.

All the Range offices except Markapur range of *East Kurnool* division were inspected by District Forest officers. This Range office has since been inspected by the District Forest Officer.

16. *Audit of the District Forest offices.*—The accounts of all the divisions of the circle for the year 1920–21 were audited by the Auditing staff of the Accountant-General and no serious irregularities were brought to notice.

17. *Recruitment.*—Three Assistant Conservators, Messrs. J. D. Connolly, H. R. M. K. Law and J. C. Wrench were posted to the circle. Mr. Connolly was posted to Guntūr and he joined the district on 20th December 1921 for training under Mr. T. Clear, District Forest Officer. Mr. Law arrived in Bellary on 8th December 1921 and Mr. Wrench on 31st January 1922 and both of them have been kept under my supervision.

18. *Recruitment to the Forest College, Coimbatore.*—Nil.

19. *Vernacular Training School.*—No school was sanctioned for the circle during the past year. Sanction has been obtained to train twenty men next year in the schools of the First and Third Circles.

Since there are as many as 90 foresters and guards to be trained in this circle, the provision that will be made in other circles will not adequately meet the situation. The training of foresters and guards being a very important matter in making them useful members of the department, a separate school for the circle is a necessity.

20. *Health of establishment, includng an account of measures of sanitation and casualties.*—The health of the establishment was fairly satisfactory in all districts, except in the Nallamalais of *Kurnool West* division. Two forest guards died of fever in *Anantapur* district, and guineaworm and Malaria caused occasional trouble in *Guntūr*. The financial condition did not permit measures being taken to improve the health conditions of subordinates in the Nallamalais by providing them with quarters in comparatively healthy localities where good drinking water is available.

21. *General.*—A noticeable feature, which retarded the progress of the department in many ways was the non-co-operation movement. It was strongest in Guntūr and the work of the department was much handicapped there. It took the form of refusing to pay grazing fees and of boycotting and assaulting forest subordinates. I am glad to say, that the strenuous and tactful measures taken by the Collector and by Mr. T. Clear, the District Forest Officer, have now resulted in comparative peace and respect for lawful authority. The executive staff in the district worked hard in the face of great opposition and under trying conditions, and the name of Mr. S. Ramaswami Ayyar, Extra Assistant Conservator, deserves special mention for efficient disposal of offence work in the three Upland ranges.

CHAPTER VIII.—GENERAL.

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(i) Formation and Management of Panchayats.

22. There was no addition to the number of panchayats that were in existence at the beginning of the year, but 9 (1 in *Bellary*, 7 in *Anantapur* and 1 in *Guntūr*) were dissolved, owing to mismanagement in the first two districts and to the machinations of the non-co-operators in the last district.

The panchayat management on the whole cannot be said to be satisfactory except for isolated cases.

(ii) Measures for improving local supplies and facilities.

23. In *Bellary*, fuel coupes in reserves were opened and sold wherever there was local demand.

In *Anantapur*, concessions were granted to ryots to sink wells and repair ponds in 4 reserved forests. Twelve coupes in 12 reserves were offered for supplying fuel and small timber to adjoining villagers, but only two of them were sold as there was no demand for the others.

In *Guntur*, permission was granted to private persons to repair existing tanks, spring channels, and construct new tanks in reserves. Forty-six fuel coupes were opened in various reserves and advertised for sale, but only 17 could be sold. Provision for sale of small timber to the ryots was made in the agreements for coupes but it was not availed of. The difficulty of obtaining manure leaves and fodder leaves is a charge levelled against the department mainly from the Upland taluks though there is little or no demand for the former and the latter can be met to a certain extent during the working of fuel coupes, but uncontrolled cutting of foliage during the hot weather cannot be permitted unless all attempts to protect tree growth are abandoned.

In *Kurnool East*, emergency coupes were worked by Chenchus and the yield was available to the people in the surrounding villages, but there is little demand for fuel owing to the existence of extensive unreserved lands. In some places the timber found on these coupes pays expenses, but the fuel is a waste product. Experiments are being made in charcoal burning and if a market can be developed, this may relieve the situation. At present, as it is absolutely necessary to keep the Chenchus in work, they are employed on regenerating the coupes cut as much as possible, rather than on cutting more.

A scheme for supply of agricultural implements to ryots through the agency of the Revenue department was sanctioned during the year and sample plots were felled preliminary to regular felling.

In *Kurnool South*, local demands were met by the working of timber, fuel and bamboo coupes.

In *Kurnool West*, financial conditions did not permit undertaking any scheme to improve the water-supply for cattle in reserves. Fuel was sold from emergency coupes at concession rates to ryots on the certificates of Tahsildar or Deputy Tahsildar that the fuel demanded was for bona fide domestic use. Manure leaf was supplied on the issue of permits at Rs. 2 per cart-load.

(iii) Timber Transit Rules.

24. There are no timber transit rules in *Bellary and Anantapur* districts, and in *Guntūr*, the rules could not be enforced owing to non-co-operation trouble. Breaches of the rules occurred in Giddalore range of *South Kurnool* district owing to the negligence of the special gang posted on that duty and measures were taken to set matters right by punishing the defaulting subordinates.

(iv) Jungle Tribes.

25. There are none in the *Bellary* and *Anantapur* divisions.

In *Guntur*, the Chenchus who are settled in the reserved forests of Palnad range, enjoy rights to the usufruct of tamarind trees at a nominal rate, to other

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minor produce and building materials for huts free of charge and to free grazing. The scheme approved for extinguishing these concessions and for the abolition of their settlement has not been given effect to during the year in consequence of the attitude of the people in Palnad range towards the Forest department. The District Forest Officer intends to take up the question again after respect for the administration of the Forest department has been completely restored.

The Chenchus, in *South Kurnool*, are very few in number and comparatively harmless in character. They are useful to the Forest department in fire-protection operations and the Ahobilam Chenchus do a certain amount of farm labour in the villages.

In the *West Kurnool* division, enough work was provided for the Chenchus to keep them in food throughout the year, but unfortunately this was not so in the *East Kurnool* division owing to inadequate budget provision made in the division, and the result was that some complaints were made by the Chenchus of Regatikunta that they were being starved. If Chenchus are not given sufficient work to earn their food throughout the year, there is naturally a tendency to resort to crime.

With a view to encourage the Chenchus to take to cultivation and give them a training in agriculture, a sum of Rs. 1,009-4-0 was sanctioned by the Collector for cultivating dry and wet lands in 18 gudems of the *East* and West divisions, the extent to be cultivated being 142½ acres. The crops raised were distributed free among the Chenchus themselves. The Special Chenchu Officer during the year was the District Forest Officer, *West Kurnool*. He reported that the cultivation in Pangidi gudem failed, on account of bad fencing, with the result that deer damaged the area, and that the Chenchus of Indreswaram deserve special mention for co-operative spirit in having set aside a sum of Rs. 140 from their earnings for lining a well which they have dug in their gudem without any assistance from Government.

The number of existing schools for the Chenchus was 14 and the average daily attendance in them ranged from 7 to 24 boys and from 6 to 25 girls. The biggest school is in Pecheruvu having on its rolls 27 boys and 26 girls. The number of boys drawing scholarships at the Markapur Board Middle School is 8, of whom 4 are studying in the Fourth Standard and 4 in the First Form. There has been a decided improvement in the conduct of the Chenchus. They have to be provided with departmental work to keep them under control and away from the temptation to commit crime. Of the total number of 16 cases registered against them, 9 cases related to forest offences, and 4 cases related to assaults on public servants.

(v) Mining and Quarrying.

26. In *Bellary*, licences for prospecting for manganese ore were granted for a period of one year, (1) in Thummurguddi reserve of Kudligi range over an area of 1,557 acres, and (2) in Alagilwada reserve of Harpanahalli range over an area of 601 plus 405 = 1,006 acres. An application for mining black and red earth is under correspondence with the Board. Twenty thousand tons of manganese ore left unremoved by the South Indian Manganese Company and which were forfeited to Government has been sold with two years' time for removal at 12 annas per ton.

In *Anantapur*, three prospecting licences for a period of one year to prospect for Barytes were granted in Muchukota and Nerijamupalli reserves. Licences to prospect for Asbestos in Yadiki reserve and for Stearite in Muchukota reserve were also granted for a period of one year. Although prospecting licences were granted, the parties have done very little in Muchukota and nothing in other places.

In *Guntūr*, the licence to prospect for diamonds granted in 1920-21 having expired, it was renewed for another year by the Collector. Nothing has been stated about the result of working but it is believed to be negative. There is great scarcity of water in the neighbourhood which is a great obstacle to regular work in prospecting. Another licence was granted for prospecting galena in Guttikonda Block II and in Ludikonda in Bollapalli parcelle No. 61 but no work was done.

In *West Kurnool*, the right to quarry and remove slabs and building stone from 15 blocks in Dhone and Kurnool ranges, was leased out at an annual rental of Rs. 13,054 for 3 years. A tract of about 390 square miles in the Yerramalais has been granted for collection of slabs and material for cement on a royalty basis.

In *South Kurnool*, a licence to prospect for barytes in plot 19 "A" of Jaladurgam reserve, and another for mining in plots I, II, III, in the same reserve for a period of 30 years was issued. *Second Circle.*

(vi) LIVE-STOCK.

(*a*) *Elephants.*

27. Two baggage elephants are maintained in the *West Kurnool* division and they are in good condition.

(*b*) *Other animals.*

Of the 12 bulls that were in stock in *West Kurnool* at the beginning of the year, one bull has been disposed of being too old to work, and another died. Only 4 of the remaining 10 bulls are serviceable and the remainder are too old. The old ones are given rest as no expenditure is incurred on their maintenance as they get grazing free.

There is no live-stock in the other divisions of the circle.

(vii) SUITS.

28. There were no suits during the period.

(viii) CONTROL OF UNRESERVED LANDS BY THE FOREST DEPARTMENT.

29. There are no such lands in charge of the department, except in *East Kurnool* where, it is reported, that the unreserves in three villages, Bonulingam, Velagalapaya and Papinenipalli, continued to be under the general control of the department to prevent smuggling of minor forest produce. The right to collect tangedu bark and nux-vomica seeds in the unreserves of all divisions was leased out by the department.

In *West Kurnool*, the District Forest Officer reports that he has two cases of unreserved areas to be clear-felled by the department before the areas are assigned for cultivation by the Revenue department. The District Forest Officer proposes to carry this out by arrangement with the Collector so that he may keep the Chenchus employed on the work.

BELLARY,
29*th July* 1922.

A. B. JACKSON,
Conservator of Forests, Second Circle.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1922.

THIRD CIRCLE.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. Alteration in Area.

Reserved forests.—There is a net decrease of five square miles due to the disreservation of six square miles and the reservation of about one square mile. *Third Circle.*

The reduction is mainly in the *North Vellore* division, where the whole of the Vellore and Sattur reserves were notified under section 24, but also to a smaller extent in the *Chittoor*, *Chingleput*, *Nellore* and *West Cuddapah* divisions.

Further disreservation has been proposed but will take effect only during the current year.

All the existing 'concession areas' are being investigated with a view to disreservation or reabsorption in the reserves they pertain to. This matter has been dragging on for a long time; the attention of the District Forest Officers has been called to this subject recently and it is hoped to complete the investigation during the current year.

2. *Reserved lands.*—There is a decrease of 677 acres made up of several items all of which are below one square mile. Eight hundred acres were removed from the list and 123 added.

2. Forest Settlement.

3. There is only one item of importance pending: the settlement of the Rapur Veligondas proposed reserve of 11 square miles in the *Nellore* district. This has been under settlement for three years owing to disputes, acquisitions and incorrect maps. It is expected to be finally settled in the current year.

The reservation of an area of about five square miles in the Chitvel range of the *South Cuddapah* division, has been proposed and is still under investigation.

3. Demarcation.

4. No new boundaries were demarcated during the year except in regard to small lengths requiring rectification, and these have been considered as repairs.

Existing boundaries were repaired and improved by widening and planting of demarcation pillars. The chief work of the year in this direction was the investigation of the Mysore-Chittoor boundary by a special surveyor lent by the Madras Survey department. The line as laid out by him has been accepted by the Mysore officers and will now be definitely redemarcated wherever necessary.

As usual considerable lengths, aggregating to 5,604 miles, are reported to have been maintained by the subordinates.

4. Forest Surveys.

5. *A Survey of India* party was at work in the *West Cuddapah* division and surveyed five reserves and part of another on the 2″ = one mile scale. The aggregate area surveyed was 44·77 square miles.

6. The coupes of the year, road alignments, etc., were surveyed by the local staff.

The prescribed *reference maps* have been posted.

Third Circle.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. Regulation of Management.

(a) Preparation and control of regular working plans.

7. The working plan for the *North Cuddapah* division referred to in last year's report was submitted by Mr. Mahony, but had to be returned for revision on certain points and is still pending.

There has been some revision of existing plans in the same division either in the reallocation of coupes or in the reduction of areas owing to the prescribed coupes being too large. In two cases the system of working has been changed from coppice with standards to simple coppice and one working circle has been abandoned as there is no demand for the produce.

In *South Cuddapah* some rearrangement of coupes was necessary for various reasons.

The working plan for the Palkonda Hills in *West Cuddapah* prepared by the late Mr. M. R. Sundaram Ayyar was revised by Mr. J. A. Master and was submitted for approval just after the close of the year.

Reconnaissance reports for similar plans for other parts of this division were submitted and discussed and the preparation of plans will now go forward.

A tentative working scheme for the Kosinapalli reserve was approved.

The preliminary report for the revision of the Sriharikota reserve working plan was fully discussed with the District Forest Officer, *Nellore* and also with the Chief Conservator during the year. It has been decided to start with a tentative working scheme for three years and the preparation of this scheme is now in the hands of the District Forest Officer and should be ready very shortly.

The District Forest Officer, *Chittoor* has not succeeded in completing any of the three working plans that were already in hand at the beginning of the year. As a special officer is about to be attached to the district, the completion may be expected at an early date.

Work in connexion with the revised Chandragiri working plan has started however as a tentative scheme pending the completion of the regular plan.

The revision of the working plan in the *North Vellore* division is proceeding. A special duty Ranger was attached to the division to help the District Forest Officer.

Work was continued as far as possible under the prescriptions of the existing sanctioned plans which have not been cancelled pending the submission of revised ones.

2. Communications and Buildings.

(a) Roads and bridges.

8. During the year Rs. 21,630 was spent under this sub-head as against Rs. 19,727 in the previous nine months. Of this amount Rs. 13,300 was spent on $32\frac{1}{4}$ miles of new work against Rs. 9,056.

9. Most of the new work was carried out in the Seshachellam Hill block of *South Cuddapah* where the system of roads and bridle-paths was extended by $6\frac{1}{4}$ miles and $9\frac{5}{8}$ miles respectively.

About two miles of cart road were constructed in the Palkonda Hills of *West Cuddapah* and in *Chittoor* divisions the road linking up Bhakarapet, the future headquarters of the Chamala range, with Chandragiri was completed by an extension of of three miles.

In other divisions there was either no new work or the items are insignificant.

In the *Nellore* division the tramway materials were used for the transport of fuel.

The existing stock was overhauled, an inventory made and missing articles were written off during the year.

The balance of stock is now inadequate and it is proposed to supplement it in the current year.

(b) Rivers.

10. There is nothing to report under this head.

(c) Buildings.

11. The total expenditure was Rs. 47,536 against Rs. 25,675 in the previous nine months.

Of this amount Rs. 30,041 was on new work, Rs. 9,978 for repairs and the cost of establishment under the sub-head was Rs. 7,517.

12. The important items of new construction were,

North Cuddapah division—

(1) Completion of a rest-house at Nangannabhavi.
(2) Part construction of range quarters at Badvel.
(3) Part construction of permanent camps for the vernacular training school.

South Cuddapah division—

(1) Completion of range quarters at Kodur.
(2) Completion of combined range quarters and range office at Chitvel.

West Cuddapah division—

(1) Completion of a rest-house at Pullalamadugu.
(2) Completion of a rest-house at Chintarajupalli.

Nellore division—

(1) Completion of subordinates' lines at Gudur.
(2) Completion of subordinates' lines at Venkatapuram.

Chingleput division—

(1) Completion of range quarters at Sriperumbudur.
(2) Completion of range quarters at Sathiavedu.
(3) Part construction of subordinates' lines at Kambakkam.

Chittoor division—

(1) Part construction of range office at Bhakarapet.
(2) Part construction of range office at Mamandur.

North Vellore division—

Construction of subordinates' lines at Arungaldrug.

(d) Miscellaneous.

13. The total expenditure amounted to Rs. 2,363 against Rs. 2,625 for the previous nine months. Of this Rs. 1,263 was on new works, none of them of much importance. The expenditure was entirely concerned with the construction, repair and improvement of wells and other sources of water-supply.

3. Protection of Forests.

(a) General protection.

14. A satisfactory comparison with the previous year's figures is not possible as the period concerned only nine months and to increase the figures proportionately does not tend to accuracy.

The total number of new cases reported in the past twelve months is 7,286 against 6,329 in the previous nine months, giving proportionately 8,439 for twelve months. This indicates a decrease in number of cases reported. This decrease is under all the classes of offences except under injury by fire. Of this latter class a total of 340 cases are reported, of which 336 undetected, against 95 (87 undetected) in the previous nine months (proportionately 127 for twelve months).

15. It is difficult to assign any clear reason for this proportionate decrease. Undoubtedly the spirit of non-co-operation, and the active results thereof as regards infraction of the Forest Law, that prevailed in certain tracts, notably *Cuddapah*, the Vayalpad taluk of *Chittoor* and the Kanigiri taluk of *Nellore*, affected the number of offences. But the effect of this cause operated in a two-fold way, the one contrary to the other, as regards the number of cases reported.

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There is no doubt whatever that many offences were committed under the non-co-operation influence and that if all had been reported there would have been a very large increase in the period under report over previous periods, but firstly the subordinates in many cases were terrorised and would not report cases they knew of and secondly some cases that were detected and reported though they concerned a large number of offenders were treated as single cases, whereas under normal conditions they would have been detected as separate cases.

The subordinates could hardly be blamed for their failure to bring organized bands into court since a few men were faced with large bands of men imbued with the idea that the Gandhi Raj was either in being or about to be established and that the forests were theirs to work their will upon. There was much open defiance and but little support by the village officers, though there were honourable exceptions.

The assistance of the Police had to be sought and this was freely granted, especially in *Cuddapah.*

Very considerable loss to Government has resulted from the activities of non-co-operators.

This loss is partly direct loss in revenue through the failure to sell Kanchas in the *Nellore* district, and falling off in grazing revenue because cattle were grazed without permit and indirectly through the wrecking of cairns and other boundary marks in the *Cuddapah*, *Chittoor* and *North Arcot* (*North Vellore* division) districts and actual organized destruction of the forests.

It is impossible to assess correctly the money value of the loss, but it amounts to many thousands of rupees.

16. This state of affairs in the *West Cuddapah* division led to the imposition of a punitive police force in the Rayachoti taluk, a Forester being specially deputed to command it. This has had an excellent calminative effect not only in the locality itself but throughout the district and it may be said that organized forest depredation under this unlawful spirit is at an end in the district.

The non-co-operation spirit spread from the Rayachoti taluk into the adjoining taluk of Vayalpad in the *Chittoor* district, where there were three serious cases of assault on forest subordinates while in the discharge of their duties.

In one of these a forester, an ex-military non-commissioned officer, used a gun and injured one of his assailants. He possessed, however, only two cartridges and these being expended he was severely beaten and left unconscious. Some 20 of his assailants have been apprehended and they have been committed for trial to the ensuing sessions.

17. On the whole there has been a distinct if not very pronounced increase in the number of cases reported in the tracts affected by the non-co-operation agitators which is compensated, in the Circle figures, by a distinct fall in the *Chingleput* district, where a large proportion of the forest area was leased to panchayats or to 'kanchadars'.

18. There have been a number of cases of rescue of cattle after seizure and before impounding, mostly in the *Chittoor* and *North Vellore* districts. In the latter district three forest guards were murdered, one accidentally as the bullet discharged at one man after passing through that individual penetrated him also as he lay asleep close by.

The third man was beaten to death by a party of men he had detected in the act of illicitly removing manure leaves. Unfortunately the murderers in both cases remain unknown, at least there is no legal evidence against any person. The murder by shooting took place at night and the guard beaten to death was unaccompanied at the time. The three widows have been granted compassionate pensions.

19. The number of cases compounded was 4,766 for an aggregate of Rs. 68,685 against 4,279 for Rs. 64,575 for the previous nine months.

20 Rewards to an aggregate of Rs. 539 were granted against Rs. 721 in the previous year.

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(*b*) *Protection from fire.*

21. It is impossible to make a comparison with the figures from previous years, at least as regards results, since the present figures are for the calendar year 1921, whereas previous figures were compiled for either the forest or the financial year.

There was no appreciable change in the area attempted and no change in the method of protection.

The total area burnt was very slightly larger than in the previous year. It was less in the three *Cuddapah* divisions but this was compensated by increases in the *Chittoor* and *North Vellore* divisions and a slight increase in *Nellore*.

22. The problem of fire protection, especially in the *Cuddapah* district, is still unsolved and it is now being considered whether the whole system should not be changed and early burning resorted to.

With the rise in prices and cost of labour the expenditure in some cases is greater than the value of the forest justifies and it is proposed to investigate the whole question division by division and even range by range.

23. The current calendar year has been particularly dry so far and during the first three months disastrous and widespread fires have occurred, particularly in the *Cuddapah* district, but the figures are not included in this report which pertains solely to the calendar year 1921.

(*c*) *Protection against cattle.*

24. The area closed to grazing for the whole year rose from 825 to 831 square miles. The increase is due mainly to the closure of coupes worked only partly counterbalanced by the throwing open of areas previously closed, either worked coupes now out of danger from grazing or areas opened as their closure was not justified, especially in the *North Vellore* division.

The area open to grazing for the whole year to all animals but goats was 2,518 square miles against 2,493 in the previous year.

25. In the *Chingleput* and *Nellore* districts most of the reserves are leased as 'Kanchas.' The sales suffered in Nellore through the non-co-operation agitation and a number of kanchas remained unsold.

There have been complaints against the kanchadars of late in the *Nellore* district, but the system, on the whole, is the best suited to local conditions. Every endeavour is made to induce villagers to lease the kanchas instead of allowing private speculators to do so, definite privileges and concessions being allowed in the former leases.

26. Goats were excluded from all reserves except from 2 square miles in the Chingleput district where the artillery practice ground is open to those animals.

27. There has been a falling off in the total number of animals grazed on licence of about 17,000 (13,000 cow units). (These figures exclude the kancha and panchayat forests.) This has occurred mainly in the *Cuddapah* divisions and is due partly to non-co-operation and partly to the Nellore cattle coming in fewer numbers owing to the penning in the interior of the forests being prohibited during the year and also to the levy of toll fees at the Dornal pass. The toll for cattle at that place has since been removed.

In the *North Vellore* division there was a small increase due mainly to the throwing open of some areas previously closed.

28. The number of cattle impounded fell from 38,455 for nine months to 36,805 The fall was shared by all divisions except *North Cuddapah* and *Nellore* where there were increases of 75 per cent and 30 per cent respectively. The increase in these divisions is ascribed to non-co-operation.

(*d*) *Protection against injuries from natural causes.*

29. The work done under this heading was as follows :—

Over about 20 acres in the Sriharikota reserve viscum bushes were removed from Nux Vomica trees in the Sriharikota reserve of the *Nellore* district. This was by

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way of experiment to ascertain the probable cost and to obtain general data concerning this parasite. Further lines of experiment were laid down during the Conservator's visit. There is reason to believe, however, that the effect of the parasite is not as harmful as was thought at first. It is too early to come to any conclusion.

The District Forest Officer *Chittoor* (Mr. Littlewood) has been conducting interesting experiments on a useful scale regarding the effect of 'Atlas' preservative on thorny climbers, lantana and prickly-pear. In the first two cases the bark of the plant to be killed is scraped just above ground level and the poison brushed on; with prickly-pear the solution is sprayed on the bushes. The first method effectively kills the plants in a large proportion of cases, and with prickly-pear the above ground portion is killed which facilitates the digging up and burning of the roots.

It is too early to lay down any definite conclusions, but as far as the experiments have gone they tend to show that this method is likely to accelerate and cheapen the eradication of noxious growth.

There is one point for grave consideration and that is the possibility of cattle grazing in the areas treated being poisoned as Atlas preservative is believed to contain a large, if not preponderating, proportion of arsenic.

Climber cutting was carried out in all felled coupes either at the time of marking by the subordinate staff or during felling by the contractors.

CHAPTER III.—SYLVICULTURE.

(*a*) *Natural reproduction.*

30. The year, generally speaking, is reported to have been a good one for natural regeneration.

Pterocarpus santalinus, *Hardwickia binata*, *Anogeissus latifolia and Santalam album* particularly are mentioned. In the absence of a standard, however, it is impossible to give definite value to these generalities. Seedlings spring up, but established saplings are more conspicuous by their absence than their presence and all that can be confidently stated is that for those species it was a good seed year.

(*b*) *Artificial reproduction.*

31. No new regular plantations were made. The so-called 'river side plantations' along the Palar river in the *North Vellore* division were maintained. But here, as nearly everywhere else, dibblings of seeds even when temporarily successful came to nothing eventually as the seedlings generally succumbed in the ensuing hot weather.

As usual sandal has to be excepted from this discouraging statement and 21 small topes that were started in the *Chittoor* district appear to be satisfactorily established. These areas are approximately 2 acres each in extent and are walled or fenced to protect them against cattle.

These 'topes' are scattered over the reserves of three ranges and are intended to become *foci* for the natural spread of the species as soon as the trees in them bear fruit.

(*c*) *Cultural operations.*

32. No operations under this head other than those mentioned above were undertaken.

(*d*) *Operations for the improvement of the growing stock.*

33. Besides some of the operations described above, which might also be included here, the following works of improvement were carried out.

In the three *Cuddapah* and the *Chittoor* divisions forty coupes, with an aggregate area of 4,451 acres, were worked under the so-called 'improvement felling' system, the main object of which is the improvement of the existing growing stock.

In the Palmanēr range of the *Chittoor* district operations were undertaken to assist the existing sandal trees by freeing their heads of overhead shade and cover in two reserves at a cost of Rs. 338. A similar operation on a smaller scale in the Vayalpad taluk of the same district cost Rs. 68.

In the *Nellore* district experiments were continued to arrive at the best method of clearing thorny noxious growth in the fodder reserves so as to increase and improve the fodder. *Third Circle.*

Lantana was cleared over an area of about 15 acres in the Horsleykonda reserve of the *Chittoor* district.

All worked fuel coupes are fenced against cattle.

CHAPTER IV.—EXPLOITATION.

(*a*) *System of management.*

(i) Major Forest Produce.

34. The areas under working are classified as follows:—

System.	Area in sq. miles.	Percentage.
Simple coppice	152	17·13
Coppice with standards	227	25·59
Improvement fellings	130	14·66
Not under any definite system of working	378	42·62
Total ...	887	100

This is 12 square miles less than in the previous report and there are changes in the areas under each item. This is due in part to wrong figures in the previous report but also to disreservation and to the alteration in the working for some areas from coppice with standards to simple coppice.

(ii) Minor Forest Produce.

(1) *Bamboos.*

35. Bamboo blocks were worked as usual by lessees.

(2) *Miscellaneous.*

36. It is to be regretted that the three year lease for nux-vomica seed collection suffered a set-back in all the divisions except *Chittoor* owing to the financial failure of the lessee whose lease had to be cancelled for failure to pay the second half of the year's instalment. The *Chittoor* district was leased to a separate contractor who is carrying on satisfactorily. The cancelled leases are to be resold.

The price of nux-vomica fell rapidly during the year and this accounts, no doubt, for the failure.

37. In the Sriharikota Range of the *Nellore* division minor produce, including nux-vomica seeds, was collected departmentally; elsewhere all items were leased to contractors.

The demand for tanning barks remained poor but there are indications of a rising tendency. For this reason the leases were restricted to one year.

Only in the *North Vellore* division was hay extracted by the Military Grass Farms establishment and there was no departmental working.

Grass was removed free from most of the areas and the concession was extended during the year to removals from closed coupes in the *Cuddapah* district with the object of getting rid of the danger due to fire and the injury to woody growth by choking when abundant grass stands on the area.

In the closed coupes attached to the "Kanchas" of the *Nellore* and *Chingleput* districts the Kanchadars are allowed the privilege of removing the grass in return for the protection of the coupes against grazing, fire and theft.

38. Grazing and the removal of manure leaves (except in the *North Vellore Division*), minerals and thatching grass, was permitted on permit.

In the *Cuddapah* district the seigniorage fee for manure leaves was reduced from Rs. 2 to Re. 1 per cart-load.

Third Circle.

(b) *Agency of Exploitation.*

(i) Departmental Agency.

(1) *Major Produce.*

39. In the *South Cuddapah* division one improvement felling coupe was worked departmentally as no purchaser could be found for it.

All other areas worked during the year were sold standing to contractors.

Small quantities of produce were extracted here and there by departmental agency either for specific purposes, such as the construction of buildings, or in cutting boundaries and clearing road alignments.

2. *Minor Forest Produce.*

40. As usual the minor forest produce in the Sriharikota Reserve of the *Nellore* district was collected by departmental agency.

Insignificant quantities were also collected in the *North Vellore* division prior to the areas being leased; thereafter and in all other tracts the produce was leased to contractors.

(ii) By Purchasers.

41. There is nothing to add to the information in the two preceding paragraphs; the great bulk of exploitation is carried out by purchasers.

(iii) Free Grantees.

42. Free grants were made only to indigent people for the purpose of rebuilding dwellings destroyed by fire.

The quantities, which are shown in forms 76 and 77 are somewhat in excess of the previous year, except as regards fuel of which there was no grant during the year; but the figures under report cover a period of 12 months as against 9 for the previous reports and proportionately there is a difference of about 10 per cent in favour of the period under report.

(iv) Rights and Privileges.

43. Under the terms of the Forest settlement the inhabitants of Settigunta village in *South Cuddapah* have the right to graze a limited number of cattle free in the reserve of that name.

—	Timber in thousands of cubic feet.	Value.	Fuel in thousands of cubic feet.	Value.	Bamboos in number.	Value.	Grass and grazing.	Other miner produce.	Total.
		Rs.				Rs.			Rs.
Free grantees ..	59	8,740	..	..	30,715	392	174	770	10,076
Right holders ..	..	..	..	..	..	..	86	..	86
Total ..	59	8,740	..	..	30,715	392	260	770	10,162

(c) *Outturn and sources of forest produce.*

44. The change in the period of report makes comparison in outturn of no value and hence it is omitted.

It was hoped that the lease of nux-vomica separately would lead to the collection of trustworthy information of yield but the failure of the lessee has rather frustrated these hopes.

In any case there are no figures of past yield for comparison except in Sriharikota where a good season resulted in 589⅓ candies of nux-vomica being collected against 462 in the previous season and the previous maximum of 515 candies. The increase is partly due to the more or less complete stoppage of smuggling by private owners, and also to the yield of privately-owned trees being collected departmentally under a new arrangement. This latter step was taken by way of putting a stop to smuggling. The owners are paid the actual selling price less a small percentage to cover cost of collection, storage and sale.

CHAPTER V.—FINANCIAL RESULTS.

Third Circle.

45. As the last report covered only a period of nine months and as there have been territorial changes since the last full year's figures were compiled no useful comparison with past figures can be made.

The outstanding feature is that the considerable net surplus of previous years has been converted into a deficit of Rs. 41,818. This is due practically entirely to the rise in cost of work and of labour for the fall in revenue as compared with the figure of the previous reports is about Rs. 4,000, and Rs. 7,500 less than the average for the previous quinquennium, whereas the total expenditure is greater than that of the previous period by Rs. 1,18,778 and exceeds the average of the previous five years by Rs. 2,02,093.

46. The fall in revenue is accounted for mainly by decrease in grazing revenue in the *Cuddapah* division and in *Nellore* partly due to the influence of the non-co-operation spirit and also to the non-advent of Nellore cattle in Cuddapah as previously explained. There was also some fall in the prices realized for tanning bark leases.

The aggregates seem to indicate that the rise in expenditure is entirely under salaries and allowances and undoubtedly this is mainly accountable. Nevertheless the rise in cost of material and labour is also a material point for though, the aggregate under the budget head A does not greatly exceed past figures, the actual work carried out was less as the programme was pruned down heavily owing to the financial stress.

47. Only two divisions—*Nellore* and *North Vellore*—showed a surplus (Rs. 1,08,271 and Rs. 60,779 respectively) and all the others contributed towards the deficit in varying degrees.

CHAPTER VI.—RESEARCH AND EXPERIMENTS.

48. *Red sanders*—(*Pterocarpus santalinus*).—The experiments referred to in the last report were continued. They must be persisted in for a series of years before conclusion of any value can be derived from them. It would be waste of space to enter into details at the present stage.

No new experiments with this species were inaugurated.

49. *Hardwickia binata.*—It is matter of common observation that promising regeneration of this species in suitable localities disappears for the most part before reaching the sapling stage.

To ascertain the cause of this failure an area of 5 acres in the Sancherla Fuel series in the Porumamilla range of *North Cuddapah* was walled in. A note of the consistency and the condition of the existing crop was made and the area is to be kept under observation. On a small sample plot within the walled enclosure the *Hardwickia* seedlings were enumerated and their future progress will be watched.

50. *Sandal* (*Santalam album*).—The two isolated groups of sandal saplings on the tank bund at Horsleykonda described in the last report were kept under observation. There can be no doubt that these have existed for nearly three years without a host plant of species other than sandal and yet they do not appear to have suffered materially.

Dibblings of sandal seeds in order to spread the species where it does not occur at present continued in all divisions with varying results, but mostly successful.

Generally speaking, this species comes up readily in suitable localities and failure is due to specific causes; usually either unsuitable locality or the destruction of seeds by animals.

In this connection it may be mentioned that the District Forest Officer, Chittoor (Mr. Littlewood) experimented with red oxide of mercury and corrosive sublimate to try and protect the seeds of sandal against rodents, but the poison did not prevent their destruction. There was no news of the rodents.- This experiment was reported in the *Indian Forester* of April 1922.

It is believed that another occasional cause of failure is due to the local people pulling up the seedlings through apprehension that the forest will be closed and their privileges otherwise restricted if the propagation proves successful.

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51. *Miscellaneous.*—Experiments on several other species are under observation in other localities: notably *Shorea Tumbuggaia* on the Kambakkam Hill in the *Chingleput* district and on *bamboos*, *teak* and *Hardwickia* in the Pichanur tope in the *North Vellore* division.

52. *Rooting of coppice.*—Advantage was taken of the Vernacular Training School to start some observations on the power of coppiced stumps to produce new roots and the incidence of such roots being formed. The importance of this phenomenon is obvious since the life of pure coppice depends on it and also the necessity or otherwise of securing new seedlings in a pure coppice area. No conclusions can be come to yet but the observations made so far indicate that new roots are formed only after the old roots begin to decay.

Observations on a large scale, in all localities and with all species are necessary. The Vernacular Training Schools offer a good opportunity for such research as they work under selected officers.

53. *Eradication of noxious growth.*—Experiments with Sodium arsenate on thorny climbers in the *South Cuddapah* division (Mr. Master) proved unsuccessful, but, as previously stated, considerable success was obtained in the *Chittoor* district by Mr. Littlewood with Atlas preservative.

A primus blow lamp was also experimented with in the *South Cuddapah* division to see if it could be used for killing thorny growth and grass; but it was found that the flame is not sufficiently hot for the purpose and also it is too fitful under the conditions it would have to be used in for this purpose.

In the *Nellore* district (Mr. V. N. Seshagiri Rao) experiments were conducted in fodder reserves with the object of arriving at the best method of eradicating thorny growth so as to increase the available pasture. The greatest success was attained by exposing and cutting the side roots and then burning the stumps by firing heaped dry brushwood over them. Of 161 stumps so treated all but 9 were killed outright and the survivors threw up a few weak shoots. The cost was Rs. 2–2–0 per acre, which is well within the economic limit.

Better results still and at a lower cost, however, seem likely by employing a whole-time Forest Guard whose sole work is eradication and who is given extra help at special seasons. He is provided with the necessary tools and lives in a hut on the area and spends his time in rooting up the noxious growth which is then burnt or sold if there is demand.

54. Experiments, already referred to in an earlier chapter, are being carried out in the Sriharikota reserve of the *Nellore* district to obtain information regarding the amount of damage done by parasitic *Loranthaceae* (mainly *Viscum orientale*) to *Strychnos Nux-vomica* and the best way of dealing with the pest. The observations are being directed particularly towards the following points:—

(*a*) The species of plants other than *Strychnos Nux-vomica* commonly attacked.

(*b*) Whether the parasites die off of themselves and if so when and how.

(*c*) How soon reinfection takes place after a tree has been cleared of the parasite.

(*d*) Whether infection takes place at a definite season.

(*e*) Whether new shoots of the parasite grow up after the bush has been pulled off from roots left in the host.

55. A research and experiment register has been opened in the Circle office. In this the '*approved*' experiments in the several districts are posted in order to ensure continuity. In the absence of such a Circle record experiments started are apt to be neglected or lost sight of altogether on the transfer of the officer who has started them and much useful work has come to nothing in this way in the past.

CHAPTER VII.—ADMINISTRATION.

56. There has been no change in distribution during the period under report.

57. *Health and sanitation.*—Parts of the *Cuddapah* district, the Mamandur range of the *Chittoor* district and Sriharikota in the *Nellore* district maintained their evil reputation for malaria. It is necessary in this connection not to retain officers for too long in these tracts; as they comprise more than half the total number of ranges

in the Circle, however, it is a matter of considerable difficulty to effect transfers at reasonable intervals, but some arrangement is necessary if the efficiency of the staff is not to be very seriously impaired. *Third Circle.*

Mamandur especially is particularly unhealthy and proposals for the improvement of the sanitation of that place have been in contemplation for several years. Financial considerations have stood in the way and it is only in the year under report that definite steps have been taken. Range quarters in a healthier site were nearly completed and the clearing of prickly-pear and other bushy growth over a wide belt all round the dwellings has been started. It is also proposed to breach an insanitary tank near the village and thus oblige the people to resort to draw wells for their water. So long as the tank exists their sloth will prompt them to get water from it, however bad that may be.

The proposal for a pipe line from the hills adjoining to bring good water to Mamandur was investigated by the Forest Utilization Officer, but the cost was found to be prohibitive. Fortunately, however, it has been ascertained that the belief that all the existing wells ran dry during the hot weather is unfounded and the solution seems to lie in finding a good site for a new and large well.

The *casualties* reported in the Circle are :—

From *malaria* three Foresters, five Forest Guards, one Range clerk and two children.

From *plague* one Forester (North Vellore).

From *fever* (undefined), one Forest guard.

58. *Tours of inspecting officers. Conservator.*—All the divisions were visited and all the District Forest offices were inspected during the year. 306 days were spent on tour.

District Forest Officers.—All the officers spent more than the prescribed minimum on tour. All the Range offices but 3 were inspected during the year, and 2 of the latter soon after its close.

59. *Audit of District Forest Office accounts.*—All the offices were audited with satisfactory results.

60. *Madras Forest College.*—Three students returned from training and were posted as Probationary Rangers.

Two Foresters were deputed for training and will complete their course in June 1923.

One Forester was deputed in July 1920 and was at the College throughout the year.

61. *Vernacular Training School.*—The 1921 session terminated successfully in August. The current session began with 31 students in January 1922 and will terminate on 31st July. The Vernacular Training School is now located permanently in the *North Cuddapah* division and this permits of permanent camps being constructed, instead of tents having to be provided.

62. *Conduct of establishment.*—On the whole the Rangers have behaved and worked well, a few excellently, though there are some quite unsatisfactory individuals.

The Protective staff is commended in some districts, but is generally very unsatisfactory in the *Cuddapah* district, more particularly in the *West Cuddapah* division where lack of control brought about great laxness in every direction until recently. The present District Forest Officer (Mr. Mahony) is continuing the work of tightening up control and weeding out undesirables started by his predecessor (Mr. Master) who was in additional charge of the division during part of the year.

CHAPTER VIII.—GENERAL.

(i) Formation and Management of Panchayats.

63. Eight panchayats were dissolved in the *North Vellore* division as the reserve in their charge is to be disafforested for cultivation.

In the *Chittoor* district 2 panchayats that were dissolved 2 or 3 years ago are proposed for reinstitution for which sanction was received just after the close of the year

Third Circle.

There were no other changes.

In the *North Vellore* and *Chingleput* divisions the panchayats are reported to have worked satisfactorily, but, of these in the *West Cuddapah*, *Chittoor* divisions and 2 out of 3 in the *Nellore* division the reverse is complained of.

(ii) CONFERENCES AND MEETINGS.

64. The Conservator requested Collectors to admit Forest officers to conferences held with their Revenue officers and several such were held. The Conservator was present at one each in the *Cuddapah*, *Chittoor* and *Chingleput* districts and is convinced that much good comes of the free exchange of opinion, the explanation of reasons for certain measures and the exposition of the difficulties in the way of effecting reforms that seem so eminently desirable to those who are not familiar with the practical results.

There is, at present, far too little real solidarity between the officers of the several departments and not only such more or less public meetings are necessary but a much greater measure of informal meetings between individual officers and co-operation in the local administration. This refers not only, or even so much, to the higher officers as to those of the rank of Rangers and corresponding ranks in other departments.

A circular recommendation on this subject was issued to all District Forest Officers just after the close of the year and Collectors have been requested to co-operate.

65. The Conservator has also endeavoured to meet the Members of the Legislative Council for the several districts and has had several useful discussions and has to thank the Members concerned for a patient hearing and for useful advice and information.

66. Opportunity has been taken when occasion offered to meet deputations of ryots and to explain to them the reasons for unpopular measures and the difficulties in the way of the grant of greater privileges.

The greatest difficulties met with are the stubborn prejudice in the minds of ignorant villagers and their unwillingness to accept any responsibility in return for concessions.

(iii) MEASURES FOR THE IMPROVEMENT OF LOCAL SUPPLIES AND FACILITIES.

67. The concluding sentence of the last section indicates why concessions cannot be more widely granted.

Some wells and watering places were repaired and ryots were encouraged to effect improvements at their own cost. The financial situation prevents very much work being done in this direction. Certain villagers have been encouraged in the *West Cuddapah* division to construct a cart-track that will be useful to them through a reserved forest and a similar undertaking is under contemplation in the *North Cuddapah* division.

In the *North Vellore* division a fuel coupe was leased to a co-operative society at the average selling rate for the previous three years. The arrangement has worked very well. The society has made a profit and has incidentally reduced the sale price of fuel in Vellore town. The members are devoting part of their profits to construction of an export track to the working circle.

It is proposed to continue the lease annually for the future coupes of the working circle and it is also contemplated to lease a bamboo block to the same society.

This arrangement offers promise of smoother working and improved relations with the local population. It owes its inception to M.R.Ry. O. Ramaswami Ayyar, lately Assistant Registrar of Co-operative Societies at Vellore. It is very desirable to extend such operations and the Assistant Registrars of Co-operative Societies in other parts of the circle have been requested to lend their good offices for this purpose.

68. The question of the supply of the forest products required in the daily life of the population living close to the forests has been under detailed investigation during the year and provision is being made wherever it is required and possible to meet these demands by the opening of coupes for manure leaves, fencing thorns, fuel, etc. *Third Circle.*

(iv) TIMBER TRANSIT RULES.

69. The necessity for revised rules in the *Chittoor* district for the better protection of sandal was mentioned in the previous reports. Rules on the model of the South Kanara ones have been framed. Owing to the necessity of co-operation with the adjoining North Arcot district it was deemed essential to frame combined rules for the two districts. As this involves four forest divisions lying in two different forest circles there has been some delay. The draft rules were considered and revised at a conference of the two Conservators and two of the Divisional Officers concerned and will have to be further considered. It is hoped, however, to be able to submit them to Government before long.

Elsewhere there is no complaint against the existing rules.

(v) JUNGLE TRIBES.

70. The Yenadis in Sriharikota were employed, as usual, on the collection of minor forest produce. There has been a small increase in their numbers and it is proposed to still further increase them as they are useful for this and other departmental works.

The *North Vellore* division was added to the circle just before the beginning of the year under report. During the year the provisions of the Malayalee Hill village system prevailing in the *South Vellore* division have been extended to the Malayalis of the Thellai section of *North Vellore.* It is too early to comment on the result.

(vi) MINING AND QUARRYING.

71. The only item under this head, besides the usual quarrying of stone for construction and for road works, is the mica mining in the *Nellore* district. As this latter mining is no longer the concern of the Forest Department, no further mention will be made of it here.

(vii) LIVE-STOCK.

72. The numbers remain at two buffaloes at Horsleykonda and one bullock at Palmaner in the *Chittoor* district and one buffalo at Kambakkam in the *Chingleput* district. All are used for the carrying of water and are reported to be in good condition. As they are looked after by the local subordinates and obtain their provender by grazing in the forests, they do not entail any specific cost.

(viii) VETERINARY ESTABLISHMENT.

73. Is conspicuous by its absence.

(ix) SUITS.

74. The property of the defendant in the Pameleru suit in the *South Cuddapah* division who was adjudged insolvent was seized and put up for sale. No purchaser being then forthcoming it is to be offered for sale again.

The appeal of the Shrotriemdar of Putlampalli in *West Cuddapah* against the decision of the District Judge was successful in the High Court and a sum of Rupees 2,229-11-9 was paid to him.

The Jaghirdar has not yet filed his threatened suit in the Pamur case in the *Nellore* district, referred to in the last report.

The matter of the claim to a portion of the Udayagiri Veligonda block B of the *Nellore* district has been dropped pending the production of the boundary decision made in 1864 by Mr. Kanchi Subba Rao, which cannot be traced.

The result of the appeal of the Zemindar of Bangarapalayam in the *Chittoor* district is still awaited.

C. E. C. FISCHER,
Conservator of Forests, Third Circle.

9th July 1922.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1922.

FOURTH CIRCLE.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. ALTERATION IN AREA.

Reserved forests and reserved lands.—About 15 square miles of the reserved forest were disafforested during the year mostly to allow of extension of cultivation: with some small additions, the net area at the end of the year was 2,702 square miles as against 2,711 of last year. Under reserved lands, the area increased from 44 to 57 square miles mostly in South Salem as a result of taking up lands to try and preserve the head waters of the southern arm of the Vasisthanadi. *Four Circle*

2. FOREST SETTLEMENT.

2. Eight blocks with an area of $7\frac{1}{2}$ square miles were finally settled during the year.

3. DEMARCATION.

3. Three miles of boundaries in South Salem division were finally demarcated.

4. FOREST SURVEYS.

(a) By the Survey of India Party.

4. *Nil.*

(b) By Madras Survey.

5. The outer boundaries of reserves in Vriddhachalam taluk, East Salem division, were surveyed, while in South Salem the party completed the survey of reserves in Lalgudi and Musiri taluks and were at work on reserves in other taluks.

(c) By Departmental Survey.

6. Coupe surveys were carried out as usual departmentally.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. REGULATION OF MANAGEMENT.

Preparation and control of regular working plans.

7. *Preparation.*—No regular working plan was sanctioned during the year.

Revised schemes for working the bamboo areas in the Chitteri North Working Circle in East Salem and in the Perambalur, Musiri and Namakkal ranges of South Salem as also one for the "Kassan" (*Memecylon*) forests in the Udayarpalaiyam section of the latter division were approved by the Chief Conservator during the year. The proposals for working the Class II forests of Gingee Range in South Vellore, and bamboo areas in West Vellore are still awaited. The revised working plan for Kallavi-Elavambadi group of reserves in East Salem is under correspondence.

Fourth Circle.

A tentative arrangement for fuel working near Arasalur in the South Salem was sanctioned by the Conservator and a scheme for the six reserves around Thoppur submitted by the District Forest Officer, Central Salem, is under consideration.

8. *Control.*—The prescriptions of the following working plans were adhered to :—

(1) Sandalwood working plan for the Javadis and Yelagiris in South and West Vellore divisions;

(2) Sandalwood working plan for the Hosur Taluk, North Salem division except in areas affected by spike ;

(3) Preliminary working plan for the sandalwood areas in the other three Salem divisions ;

(4) Working Plan for the Kavaramalai working circle in Central Salem ;

(5) Working plan for bamboos and minor forest produce in South Vellore, and

(6) Working plan for the fuel areas in Vaiyampatti and Namakkal Ranges in South Salem.

The other working plans are either obsolete or defective and require revision.

2. Communications and Buildings.

(*a*) *Roads and Bridges.*

9. During the year, the expenditure on new works and repairs, was Rs. 16,555 and Rs. 4,537 respectively.

There was little progress on road woks on the Javadis. The *Amerdi-Nadanur road* was not completed as expected last year, the amount spent during the year was Rs. 10,029. *Komattiyeri-Patrakad road*—very little progress was made owing to investigations being made as to the way in which measurements had been made and paid for in the past. The amount spent was Rs. 5,104. Other road works on the Javadis are not likely to be carried out for several years as they will not pay their way yet a while (Chief Conservator's Proceedings, Mis. No. 437, dated 5th October 1921.)

The Gillman road hitherto maintained by the Forest Engineer was handed over at the close of the year to the District Forest Officers, South and West Vellore divisions, for future maintenance.

The chief items of new works were the extension of the Kottapatti-Veeramalai road, the completion of a culvert across the Venkatachalapuram supply channel on the Uppiliapuram-Sengattupatti road, the construction of a portion of the cart-track from Andimadam-Vriddhachalam Local Fund road to Kanguli reserved forest and the conversion of a portion of the Malayalapatti-Pandal bridle path into a cart-track in the South Salem division. No new work was undertaken in other divisions.

(*b*) *Buildings.*

10. The cost of new buildings and the maintenance of existing ones (including the pay of watchers) during the year under review was Rs. 6,634 and Rs. 12,009 respectively. The important new buildings constructed were —

North Salem—

Sandalwood godown at Sivanapalli.

South Salem—

(1) Rest houses at Puliyansholai, and Mayambadi ;

(2) Inspection shed at Mettunagur ;

(3) Outhouses to the Malayalapatti rest house.

A building for the Thammampatti Range office was purchased at a cost of Rs. 1,750 in South Salem division. The rest house with outhouses and subordinates quarters at Kavalur was handed over during the year to the District Forest Officer, West Vellore, by the Forest Engineer.

(*c*) *Miscellaneous.*

11. The cost of new works and repairs was Rs. 273 and 497 respectively. The expenditure was entirely on the digging of new wells or the repairs of the existing sources of water-supply.

3. Protection of Forests.

Fourth Circle.

(a) *General Protection.*

12. The following statement shows the offences registered during the year under report :—

	1921–22.	Proportionate number for the corresponding period of 1920–21.	
	NO.	NO.	
Injury to forests by fire	349	172	increase.
Unauthorized felling	6,883	6,633	,,
Unauthorized grazing	1,333	1,632	decrease.
Other offences	355	196	increase.
Total ...	8,920	8,633	

The increase under injury to forests by fire is due generally to a drier season in the early part of 1922 (this portion of the report refers to the financial year). The increase under unauthorised felling and other offences is attributed partly to the trouble caused by the 'non-co-operators' and partly to the better detection by the patrol parties and by the panchayatdars under the 'Forest village system' in Tiruvannamalai range of South Vellore who did very well.

Cases Brought to Trial.

Year.	Number.	Convictions.	Acquittals.	Percentage of failure.
1920–21 (nine months)	1,834	1,768	66	3·59
1921–22 (one year)	2,454	2,331	123	5·52

The number of cases brought to trial, viz., 2,454 is, only slightly higher than the proportionate number for the corresponding period of last year (2,445) and calls for no remarks.

13. A sum of Rs. 62,658 was collected as compounding fees during the year against Rs. 39,603 in the previous year. The variation is chiefly due to the 12 months' figures taken up for the year as against 9 months of last year. The instructions issued in G.O. No. 1990, Revenue, dated 13th June 1910, were generally followed in fixing compounding fees.

Patrol System.

14. The patrol system was in force in South Vellore, East, Central and South Salem districts during the year and is stated to have given good results, the only specific information given is that in South Salem the revenue collected for the removal of leaves for manure has risen from Rs. 2,400 in 1918–19 and Rs. 4,200 in 1919–20 to Rs. 15,809 in 1920–21 and Rs. 28,062 in this year, and this in spite of the fact that owing to the seditious non-co-operation movement raids were made by large gangs of villagers in various parts in the north of the division. The men who obtained these results were given special promotion.

Rewards.

15. A sum of Rs. 520 was distributed as rewards in South Vellore, East Salem and South Salem in important cases mostly of sandalwood smuggling and goat-browsing.

(b) *Protection from fire.*

(Calendar year 1921.)

16. *Special protection.*—The area which was under special protection was 1,066 square miles as compared with 1,101 square miles in the previous year. An area of 1,050 square miles was successfully fire-protected at a cost of Rs. 6,152 during the year. The percentage of failure being 1·53 against 0·96 in the previous year.

Fourth Circle.

The increase is due to a dry season, to the flowering and death of *Bambusa* having rendered the North Salem forests exceptionally inflammable, and to 'non-co-operation' in the East, Central and South Salem divisions. In South and West Vellore, the protection was good.

17. *General protection.*—The area under general protection during the year was 1,564 square miles against 1,586 square miles in the previous year, the percentage of failure being 1·44 against 0·67 in the previous year. The reasons given for the failure under special protection hold good here also. The area burnt was 22·06 square miles.

Appendix A shows details and origin of fires.

(*c*) *Protection from cattle.*

18. There is an increase in the number of cattle impounded in South and West Vellore, East and North Salem divisions, and Appendix B shows details. The special patrol party and the consequent increased vigilance of beat subordinates and the panchayatdars under the forest village system in Tiruvannamalai range had led to the increase.

The incidence of grazing fell during the year from 5·20 to 5·55 acres per cow unit. The figure is however misleading as in North Salem, the figure is in some parts as high as 20 acres and in other localities is down below 1 acre to the cow unit.

(*d*) *Protection against injuries from natural causes.*

19. *Prickly-pear.*—The clearance of prickly-pear in Morappur reserve in East Salem was given up, as it was thought that the operation was economically unsound. As reported last year, the regrowth of this pest was cleared free of cost by the Malayalees in the Upper slopes and Plateau of the Chitteris in East Salem. *Acacia intsia* and *Zizyphus œnoplia* were cut to some extent by subordinates in Central Salem during their patrol.

Lantana.—Eradication of this plant was continued in Chengam range till September 1921 when it was stopped. The pest occurs everywhere almost and it is hopeless to try and keep it out of the areas cleared when reinfection occurs at once from the adjoining lands.

Creeper cutting.—This was as usual done in all sandalwood areas and also in grazing blocks by the Malayalees under the forest village system.

Loranthus.—The branches of young sandal trees in Karavallikombai on the Namakkal-Kollimalais affected with this pest were cut off. The dead and dying trees were also removed.

Spike.—This is dealt with under research work.

Bison and sambhur.—These levied their usual toll of the young sandal in South and West Vellore divisions, and of other species in the Amerdi plantation.

CHAPTER III.—SYLVICULTURE.

(*a*) *Natural reproduction.*

20. Natural reproduction of sandal was good throughout, but very large numbers of the seedlings die off in the hot weather. The scratching of soil under mother trees and dibbling of seeds in small blanks seems to give no results. The seeding of sandal in the Yelagiris was fair this year, but failed in the Central and East Salem divisions.

21. *Bamboos.*—The regeneration of *Bambusa arundinacea* is good as a result of the general flowering and seeding in all the districts except North and Central Salem where the seedlings were burnt by the unusually heavy fires this year.

Hardwickia binata.—Regeneration of this species is specially noteworthy in Pavunjipatti reserved forest in South Vellore, good in Bathanavadi reserve in Central Salem, and in areas closed to grazing in North Salem, but was poor in the West Vellore Javadis.

Other species.—Natural regeneration of *Anogeissus latifolia*, *Chloroxylon swietenia*, *Albizzia amara*, and *Acacia sundra* was good in the felled coupes closed to grazing in South and West Vellore, East and South Salem. *Avicennia officinalis* is coming up profusely in the swamp forests of Pichavaram in East Salem. Natural seedlings of *Schleichera triyuga* were observed on the plateau of the Bodamalais and the Shevaroys in Central Salem. *Dalbergia latifolia and Albizzia odoratissima* are coming up on the Kollimalais and Musiri-Pachamalais and seedlings of *Agadirachta indica* were noticed in the Udayarpalayam section forests of South Salem division. *Fourth Circle.*

(*b*) *Artificial reproduction.*

22. The only regular plantation of importance is the one at Amerdi in the South Vellore division. During the year the work was confined to filling up failures in the previous year plantation by sowing seeds of *Hardwickia binata*, *Gmelina arborea* and *Pterocarpus marsupium* in the hilly portion and planting out direct Teak, Sissoo, *Chloroxylon swietenia* in the level bits, but the operation proved a failure owing to want of rains after planting and the exceptionally long dry weather of last year; Sissoo and Gmelina did best. Rupees 422 was spent during the year on the upkeep of the old plantation and Rs. 178 on the completion of the work started in the previous year. An area of 5 acres was selected in Muttakadu reserve in Gingee range for regular plantation purposes. Seedlings of Teak, *Albizzia Lebbek* (Vagai), *Melia dubia* and *Gmelina arborea* were raised in a nursery and transplanted in 5 acres in Kurumbapatti reserved forest in Central Salem but the plantation was overrun by fire, and the surviving plants are Teak (254), *Gmelina arborea* (159), and Vagai (25).

In South Salem, seeds of different timber species were sown, but very few germinated and even these did not survive the hot weather.

Taungya plantation.—The only plantation was the small experimental teak plantation in Pakkam reserved forest in South Vellore division. As the area was found unsuitable for teak, it was given up.

Cultural operations.—Regeneration operation in sandal areas was undertaken but the result of sandal sowing was on the whole a failure. As proposed last year, sandal seeds mixed with red lead and water, red lead and kerosene oil and red lead and linseed oil were sown, but without result.

(*c*) *Operations for improvement of the growing stock.*

23. Tending was undertaken in all sandalwood coupes. Creepers and climbers were cut and sandal trees were freed from overhead shade. The worked fuel coupes were fenced. In the Harur range reserve in East Salem division, *Zizyphus œnoplia*, *Pterolobium indicum*, Jasmine, Convolvulaceous creepers were cut to favour the growth of sandal. In West Vellore, Rs. 328 was spent on cutting back hollow, crooked trees, and useless species interfering with the growth of better species. The area gone over is 140 acres. In the East Salem division, the improvement fellings were executed over an area of 83 acres in Coupe II of Tagarai Hill Timber working circle at a cost of Rs. 41. The operation was stopped as it was ascertained that there was no real timber to improve and was not likely to be any.

CHAPTER IV.—EXPLOITATION.

(*a*) *System of Management.*

24. The total area under working-plan during the period was 1,707 square miles and various sylvicultural systems in force are detailed below :—

	Area in square miles.	Percentage to the total area under working-plan.
Clear fellings	49	2·87
Simple coppice	25	1·47
Coppice with standards	683	40·01
Selection fellings	338	19·80
Improvement fellings	375	21·97
Pastoral methods	195	11·42
Forests for which working plans have been prepared but are not subject to any definite system of working	42	2·46
Total ...	1,707	100·00

Fourth Circle.

(b) Exploitation by departmental agency.

25. The chief item of departmental extraction was sandalwood. A quantity of 304 tons was sold against 237 tons in the previous year, the average rate being Rs. 1,174 per ton against Rs. 1,595 in the previous year and against Rs. 1,402 in the year previous to the last. Two of the Mysore Government representatives attended our sales.

Timber.—Eight hundred and seventy-five cubic feet were removed from the areas under improvement fellings in West Vellore and 501 cubic feet of timber was extracted in the unreserves in North Salem for supply to the Remount depot and for departmental buildings.

Fuel.—Six hundred cubic feet of dead fuel were collected and sold to the pilgrims who attended the Audi festival at Hoganikal, North Salem division.

Bamboos.—With the exception of a small quantity for departmental use and a few supplied to the Remount depot from unreserves in North Salem, bamboos were extracted by lessees.

Manure leaves.—Twenty-four head loads (48 quarters) of manure leaves was cut in plot II of the Jadayagounden manure leaf experimental area in East Salem and sold.

(c) Exploitation by purchasers.

26. *Timber, fuel and bamboo.*—No useful comparison can be drawn between the figures of this year and those of last year as the latter related to nine months.

Grazing.—Of the total area of reserved forests and reserved lands, 87·17 per cent was opened to grazing against 87·47 per cent in the previous year. The incidence of grazing in the several districts of the circle is given below:—

Divisions.	Acres.	Cow units.	Number of acres per cow unit.
South Vellore	259,200	46,296	5·59
West Vellore	235,520	60,163	3·91
East Salem	296,320	40,019*	7·40
North Salem	302,080	36,123	8·36
Central Salem	243,200	57,756	4·21
South Salem	202,880	37,030	5·47
Total ..	1,539,200	277,387	5·55

1 buffalo = 2 cows = 4 sheep.

* Does not include cattle under the forest village system in the Chitteriand Atur ranges and cattle grazed in provisional class IV reserves which were leased out.

The number of cattle grazed during the year shows a reduction of 19,052 cow units and the area opened to grazing a decrease of 2,560 acres. The decrease in the number of cattle is chiefly in South Vellore and is attributed to the enhancement of grazing fees with effect from 1st July 1921. The decrease in the area is due to areas disafforested in East Salem. The number of animals permitted to graze was 305,770 against 331,597 in the previous year. The revenue from grazing was Rs. 1,67,929 against Rs. 1,64,231 in the previous year.

Minor produce—Nux vomica.—In order to regulate and stimulate the harvesting, this item was separated from the rest and the right to collect this seed from reserves and unreserves was leased out separately for a period of three years. The principal purchaser failed to pay the second instalment and his contracts were cancelled. The value of minor produce leased out during the year was Rs. 1,43,037. There was not much demand for tanning bark this year.

(d) Exploitation by right-holders.

27. The rights admitted at settlement in South Salem are reported not to have been availed of during the year.

(*e*) *Exploitation by free grantees.*

28. The quantity and value of produce removed under the head is noted below. The free grants were made chiefly from unreserves for rebuilding houses destroyed by fire. The usual 5 tons of fuel were utilized in East Salem. *Tourn Circle.*

—	Timber in thousands of cubic feet.	Value.	Fuel.		Bamboo. Value.	Grazing.	Other minor forest produce.	Total.
			In thousands of cubic feet.	Value.				
		Rs.		Rs.	Rs.	Rs.	Rs.	Rs.
Right holders	..	..	..	..	..	..	..	..
Free grantees	22	1,839	0·2	30	24	95	11	1,999
Grants at reduced rates	..	..	..	..	..	..	..	..
Total ..	22	1,839	0·2	30	24	95	11	1,999

CHAPTER V.—FINANCIAL RESULTS.

29. The following statement compares the financial results of 1921–22 with that of 1920–21 (financial year):—

—	1921–22.	1920–21.	Average of the preceding five years.
	Rs.	Rs.	Rs.
Revenue	10,41,976	10,82,934	10,99,620
Expenditure.			
A. "Conservancy" Works	1,25,016	2,26,546	2,00,013
B. Establishment	4,20,851	3,91,553	3,07,187
Total expenditure ..	5,45,867	6,18,099	5,07,200
Surplus ..	4,96,109	4,64,835	5,92,420

There was a decrease in revenue as compared with that of the previous year of Rs. 40,958 and this was mainly under II (*b*) due to the fact that the sale of land and growth in the *cashew* areas in South Arcot district (East Salem division) was stopped temporarily. As compared with the average of the preceding five years, there was a decrease in revenue of Rs. 57,644.

Under A. Conservancy and Works the expenditure during the year was only a little over half of that of last year and was due to want of progress on road works by the Forest Engineer, the reason for which is explained in paragraph 9 *supra*.

The increase of Rs. 29,298 under B. Establishment over last year's expenditure is due to the introduction of the time-scale of pay for the clerical establishment, and to the full strength of foresters and guards under the reorganization having been entertained during 1921–22 and to the enhanced rate of travelling allowance sanctioned at the end of the previous year.

Under revenue, 51·92 per cent was from major produce, 39·26 per cent from minor produce and 8·82 per cent from miscellaneous items.

Under expenditure, "A. Conservancy and Works," 21·09 per cent was on exploitation, 59·41 per cent on upkeep and improvement of forests and 19·50 per cent on other miscellaneous items.

30. The important variations are explained below:—

RECEIPTS.

(i) *By departmental agency.*

Sandalwood.—Minus Rs. 18,088. Though the quantity of sandalwood sold during the year was greater, the average price per ton fell from Rs. 1,595 of the previous year to Rs. 1,174 during the year. This is due to the dullness of the market and partly perhaps to the fact that the Coorg sales where the largest quantity

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was put up were the last and bidders held back to buy the Coorg wood which the market prefers for its name, and deferred their purchases until the last; they paid higher prices there than in this circle.

Minor produce.—Minus Rs. 8,047. Due to non-supply of hay to the Military Department.

(ii) *By purchasers.*

Timber.—Plus Rs. 24,088. This is a fluctuating item, the source being mainly from darkhast tree valuation.

Fuel.—Minus Rs. 90,280. The decrease has been explained in paragraph 29 *supra.*

Bamboos.—Plus Rs. 6,161. Due mainly to the high prices obtained in the sale of bamboo coupes in Central and East Salem divisions.

Minor produce.—Minus Rs. 10,300. Due to the dullness of market for tanning barks and also due to the unusual drought in West Vellore.

Miscellaneous.—V (*a*) *Plus* Rs. 15,788. Due to larger amount of compounding fees realized in South and West Vellore, and East and South Salem divisions.

EXPENDITURE.

A. Conservancy and Works.

The chief variation is under roads (*minus* Rs. 1,27,203) and it has been explained in paragraph 9 supra.

B. Establishment.

The increase under this head is explained at the commencement of this chapter.

CHAPTER VI.—RESEARCH AND EXPERIMENT.

31. *Sandal.*—The recording of notes on "spike" in the observation areas in the Denkanikota range of North Salem division was continued by Ranger S. Nageswara Ayyar and has, I think, been done regularly.

In the observation areas taken up in 1916, the *spread* of the disease and the *casualties* have been as follows up to the 31st March :—

Locality.	Enumerated.	Spiked.	Dead.
	NO.	NO.	NO.
Mahadeswarangudi (near Aiyur)	352	275	115
Cairn 53 area (near Jowlagiri)	513	252	120
Jowlagiri bungalow area	451	443	356

It has not been possible to trace any special *direction* here in the spread of the disease.

There has been no *recurrence* in South Thalli or at Nelkunthi both in North Salem, but there has been at Mukkankere; at Nellivasal on the Javadis, four trees altogether were attacked in December 1921 and were taken out—the first attack here was in 1917 and the disease has not spread elsewhere.

We are this year (1922-23) confining our sandal extraction to the removal of spiked trees in the hope of preventing its spread to other localities. It may be necessary to cut out *Zizyphus œnoplia* also.

The *pruning experiments* so far have given on result, the trees dying just as soon when pruned as when unpruned but it is doubtful if the pruning was done regularly. The period between the appearance of spike and the death of the tree has varied from $8\frac{1}{2}$ to $23\frac{1}{2}$ months at "Mahadeswarangudi," 8 to 24 months at "cairn 53" and 7 to 27 months at "Jowlagiri Bungalow". The trees are largest at "Mahadeswarangudi" and smallest at "cairn 53."

An attempt has been made to see if *spraying* with kerosene oil emulsion will have any effect on the spread or cure of the disease at Mahadeswarangudi.

South Vellore, East and Central Salem are so far *free from the disease* which is however spreading in North and South Salem.

Tying branches of spiked trees on to healthy trees has after six months given no result. *Fourth Circle.*

So far as *obligate parasitism* is concerned, it was found in South Vellore that one of the trees which had been under observation for five years had attached itself to the roots of a Satin wood, an *Eugenia jambolana* and an *Albizzia amara*. The roots of the two former had passed under the trench; in the latter case, the sandal had done so. In the case of a single seedling grown in a masonry trough, the plant died in January 1922 in spite of constant attention, having lived for only just over a year and a half without a host.

In West Vellore, out of four trees under observation (trenched), three are going back.

Sandal reproduces itself well by *root-suckers* and *coppice shoots* and experiments are being carried on to see whether it is worth while to work on these lines. It is too early to say if these give heartwood within a reasonable time or will grow to large size.

Yield of leaf manure.—The cutting of 23 acres in East Salem gave 224 cwt. but from what I saw all was not taken out. In South Salem (Musiri Range), the outturn per acre of leaves of shrubs and creepers only from two plots averaged 5½ head loads (weight is not given).

Myrabolams.—No further specimens appear to have been sent from East Salem though four distinct kinds at least are known to exist on the Chitteri hills.

Bamboos.—The measurements prescribed in the Working Plan to ascertain the life of culms, how often, and how much to cut, etc., are being continued, and we now have four years' measurements.

CHAPTER VII.—ADMINISTRATION.

32. The chief feature in the administration during the year under report is the introduction of a revised scale of pay of all non-gazetted services with effect from 1st March 1921, simplified new leave rules, and fundamental rules were also introduced.

Mr. H. A. Latham was in charge of the circle throughout the year.

33. *Tours.*—All District Forest officers spent more than the prescribed number of days on tour, except those of West Vellore and North Salem which districts were for some time coupled with South Vellore and Central Salem respectively.

34. *Inspections—By Conservator—Office.*—All offices were inspected during the year.

Forests.—The forests of South Vellore, East Salem and South Salem were inspected and inspection notes were submitted.

By District Forest Officers.—All the range offices were inspected during the year. The sandal sale depot at Tiruppattur was inspected by the District Forest officer, West Vellore, and that at Vellore was not inspected.

35. *List of offices audited.*—All the District Forest offices were audited and the result was generally satisfactory.

36. *Vernacular Training School.*—The school was held in North Salem division from 1st February 1922, and it started with 29 students. Three of the 29 students in the 1921 session got first-class certificates that class being below the average in ability.

37. *Health of establishment including an account of the measures to improve sanitation and casualties*—(*a*) The Circle consists mostly of ranges of hills which are notoriously malarious especially in the hot weather and the health of the establishment has as usual been far from satisfactory involving much dislocation of work.

Orders have been issued to District Forest Officers to arrange work so as to allow of a change of duties from the hills to the plains at the feverish season to foresters employed on Sandalwood operations. (Chief Conservator's Proceedings No. 1322, dated 25th August 1921.)

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(*b*) *Sanitation.*—The camp cots and mosquito nets have been purchased for supply to foresters in South Vellore with a view to see if this will improve their health.

Casualties.—Four foresters, two forest guards, and two watchers succumbed to malaria during the year.

CHAPTER VIII.—GENERAL.

1. Formation of and Management by Panchayats (to include Forest Village System).

(*a*) *Formation and Management of Panchayats.*

38. *Formation.*—Panchayats have been formed in all districts except North Salem. In West Vellore, one panchayat was formed during the year.

Management.—The management of "Class II" areas in the Tiruvannamalai range of South Vellore division has been good; of the "Class V" areas, generally the less said the better, though there are honourable exceptions. It is understood that a special inspection staff for the latter is under consideration.

(*b*) *Forest Village System.*

39. A report on the working in Tiruvannamalai range of South Vellore district for three years was submitted to Government after the close of the year. A report has also been submitted in C. No. 399-22, dated 19th February 1922, as a result of meetings with the panchayatdars at various camps in Tiruvannamalai range. Working seems to have been quite satisfactory except in one locality where the "non-co-operation" disease broke out.

2. Measures for improving local supplies and facilities for obtaining forest produce—include water-supply, fuel, manure leaves, etc.

(*a*) *Improvement of water-supply in state forests.*

(i) Boring operations.

Orders having been received to discontinue this work, nothing was done, in the expectation that a special boring branch would be formed in the Agricultural Department.

(ii) Improvement of water-supply in grazing grounds.

Nothing was done during the year.

(*b*) *The supply of forest produce to meet the wants of the people.*

40. This was as usual attended to by coupe contractors. Co-operative Societies continued to work some coupes in Tiruvannamalai range, South Vellore division, and did the work well.

(*c*) *Supply of manure leaves.*

41. Steps are being taken to grow Daincha seed (*Sesbania aculeata*) in East, Central, and South Salem divisions. The demand for manure leaves has become keen in South Salem division and some of the reserves in Musiri range have been thrown open for the removal of manure leaves. A report on the supply of manure leaf has been submitted to the Chief Conservator in this office C. No. 1920-21, dated 5th February 1921.

3. Timber and sandalwood transit rules.

42. There are no *timber transit rules* in force in this circle. It is reported that they are necessary in East Salem division and steps may be taken for their introduction.

Sandalwood transit rules.—There has been no change in the rules. The rules in North Arcot district do not cover the Kangundi zamindari, consequently sandalwood has been finding its way illicitly to Kuppam and from there to other places, and a revision of the rules is under contemplation.

Fourth Circle.

4. Jungle tribes.

43. The Malayali hill village system in force on the Chitteris in East Salem division, Javadis in South and West Vellore divisions, is reported to have worked well. The opposition to this system by the Malayalis of Tiruppattur Javadis is declining and some of the villages are reported to have expressed their willingness to join the system again.

The co-operative society established at Kōmattiyeri, South Vellore division, for the amelioration of the economic condition of the Malayalis is reported to be in a flourishing condition and a store has also been opened. Two schools for the children of the Malayalis have been started by the Taluk Board at Komattiyeri and Kelur and they are reported to be working satisfactorily.

In South Salem division, the Malayalis of Namakkal Kollimalais were allowed the exclusive right to graze their cattle on payment of fee being given a refund in return for good protection. The result is reported to be not satisfactory as some of them did not dispose of their goats and resorted to illicit removal of fuel and manure leaves.

5. Mining and quarrying.

44. A licence to prospect for copper nitrate and other allied minerals in the Periamalai reserve of Polur range, South Vellore division, was granted to M.R.Ry. R. K. Subbaraghava Ayyar of Siruvallur. He has done no work during the year.

6. Civil suits.

45. A second appeal has been preferred to the High Court during the year against the decision of the District Court, Salem, regarding the ownership of the Arana and Thirthagiri blocks of East Salem division and it is still pending.

7. Control of unreserved lands by the Forest Department.

46. The Land Revenue Administration of Javadi Hill villages in Tiruppattur taluk, North Arcot district, continued under the District Forest Officer, West Vellore division, and a report on the working was forwarded to the Chief Conservator in this office C. No. 2072 of 1921, dated 27th November 1921. The Collector has recommended that our management should continue for another year.

The unreserves of the Pachamalais and Kollimalais of South Salem division continued to remain under the partial control of the Forest Department.

8 Disturbance caused by non-co-operators during the year.

47. There was some trouble on a small scale in South Vellore and Central Salem divisions, while in South Salem there was serious trouble in more than one locality; cattle being rescued, cairn demolished, wholesale raids for green leaf for manure occurred, and cow boys were provided with trumpets for use when any official appeared, the subordinates were also assaulted. The trouble appears to have started directly after abortive abkāri auctions at Atur and was eventually stopped with the assistance of the Police and Magistracy, several individuals being bound over and others convicted and sentenced to terms of imprisonment, rigorous, and otherwise: Mr. Ellappa Chettiyar, M.L.C., came and helped by giving good advice. The general lawlessness induced by the "Non-co-operation" lecturers also led to an increase in forest fires, and to other offences. The receipts given for collections made for Congress purposes were alleged by the ignorant payees to cover the right to graze in the reserve in one neighbourhood and there was no doubt similar misrepresentation elsewhere. In Tiruvannamalai, three non-co-operating villagers were dealt with by transferring the grazing privileges conferred on them to their neighbours.

H. A. LATHAM,
Conservator of Forests, Fourth Circle.

26th July 1922.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1922.

FIFTH CIRCLE

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. ALTERATION IN AREA.

Reserved forests.—The area at the commencement of the year was 3,187 square miles. With the transfer of the old Central Coimbatore Division to VI Circle in August last, Mettupalayam range consisting of an area of 175·76 square miles was added on to North Coimbatore district; the Bargur range of the latter division with an area of 207·04 square miles being at the same time transferred to *Kollegal* district. In *Tinnevelly* district the Mahendragiri Estate of 9·88 acres—an enclosure in the Nanguneri range—was constituted as a reserved forest; and an area of 7 cents in Kuttalam forests near the waterfalls and the conservancy area of 12 acres in Vallanad reserved forest, were disafforested during the year. Thus the area at the close of the year was 3,363 square miles. In *North Coimbatore* district an area of 568·33 acres in Nellimalai reserve was disafforested for cultivation purposes; but this was given effect to only after the close of the last official year. In *Madura* the Bryant park reserve of 18·34 acres was disafforested during the year and handed over to the Agricultural department from 1st April 1922. *Fifth Circle.*

2. *Reserved land.*—The only alteration is the transfer to reserved forests of a small area—9·88 acres—in *Tinnevelly* district it having been finally notified during the year. The area of reserved land at the close of the year was 2 square miles.

2. FOREST SETTLEMENT.

3. The settlement of the eight unlocated rights in the Gutialathur reserve of *North Coimbatore* district referred to in the last report, was completed during the year and the notification under section 16 has been published after the close of the year. A portion of one of the four blocks in *Tinnevelly* district shown as remaining to be settled in the last report was completed and notification under section 16 was published during the year.

3. DEMARCATION.

4. Thirteen miles of new boundaries were artificially demarcated with stone cairns in *Kollegal* at a cost of Rs. 573 and 39 miles in Madura at a cost of Rs. 2,698.

In *Kollegal* seven miles of the previously existing boundaries were repaired at a cost of Rs. 196. For the rectification of the reserve boundary lines Rs. 19 was spent in *North Coimbatore*. For the preparation and fixing of forest pillars and for clearing beat boundary lines Rs. 381 was spent in *South Coimbatore*. Rupees 147 was spent in *Madura* for the repair of cairns along the old boundary lines. In *Tinnevelly* the demarcation of Kalakad-Singampatti boundary (3 miles 4 furlongs) referred to in the last year's report was completed the cost incurred during the year being Rs. 228.

5. The reclearing of boundaries was as usual done by subordinates in all the districts. In *Madura* the clearing of the boundary between that district and the Travancore territory was not undertaken during the year as its maintenance was ordered to be discontinued.

Fifth Circle.

6. The total length of the boundaries remaining to be cleared and demarcated at the close of the year was 559 miles against 285 miles shown in the last year's report, the difference being due to the correct length having been ascertained and shown in the return by the District Forest Officer, Madura, as per special orders issued by me last year. In *North Coimbatore* no permanent demarcation was done during the year, for, it is said, want of funds though a length of 170 miles have to be done.

4. Forest Surveys.

(*a*) *By the Survey of India Party.*

7. In *Madura* the Survey of India Party were re-surveying the reserves in the Palni and Sholavandan ranges. The maps made by the Survey of India Party in Udamalpet range of *South Coimbatore* district referred to in the last year's report have not yet been published.

(*b*) *Local Surveys.*

8. The survey of fuel coupes, forest enclosures and regeneration area, rectification of reserve boundaries and other minor works were as usual done by the local Forest Officers and draughtsmen.

9. *Reference maps.*—These are reported to have been maintained and posted up in all the districts.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. Regulation of Management.

(*a*) *Preparation and control of regular working plans.*

10. *Kollegal.*—No new working plan was prepared and sanctioned during the year. New areas were however opened for the supply of fuel and agricultural implements for the benefit of the local ryots and a temporary scheme for their working is under preparation. The deviations required for the Araipalayam fuel working plan in respect of coupe allotments, grazing regulations, etc., were sanctioned. The sandalwood areas of the Bailur and Madeswaranmalai working circles continued to be worked for the extraction of spiked and dead trees and stumps.

North Coimbatore.—The working plan for Godaipalayam fuel working circle referred to in the last report was sanctioned during the year. The old working plan sanctioned for the extraction of the spiked sandal trees in Satyamangalam and Talamalai ranges lapsed and consequently new schemes were prepared and sanctioned, for the extraction of only spiked trees. The provisions of the sanctioned working plans have been followed as far as practicable.

South Coimbatore.—No new working plan was prepared or sanctioned during the year but the District Forest Officer is revising the old working plan for the Anaimalai outer slopes. Work continued under the Mount Stuart working plan and the extraction of the accumulated old stock felled under a former working plan was completed. The quantity of timber felled from the Mount Stuart working plan area during the year is 116,681 cubic feet. A summary of prescriptions was sanctioned for the working of the fuel coupes in Pollachi and Udamalpet ranges and the coupes are being worked accordingly. The Tekadi leased forests and Punachi timber coupes were worked under regular working plans and the fuel felling series under temporary schemes. The regeneration prescriptions in the working plan for the Punachi working circle are however out of date and it has been decided to discontinue the improvement fellings prescribed therein and to substitute a system of concentrated artificial regeneration which has proved successful on an experimental scale in the locality.

Madura.—A ranger was deputed to collect materials for the preparation of working plans for the reserves of Kodaikanal and Sholavandan ranges. He has reconnoitered and drafted simple working plans for an area covering 15 square miles and they are under scrutiny.

The prescriptions of the working plans were followed. The large working plan arrears were partly worked during the year. The deviations in respect of the working order of coupes were sanctioned. To increase the fuel supply of the Madura town, two additional coupes in the Ayyalur range were sold under proper sanction.

Tinnevelly.—To do the field work for the revision of the working plan a ranger was deputed on special duty as the first rotation of most of the existing working circles expired some time ago and as it was found necessary to extend the rotation in most cases. Additional areas were selected and inspected by the District Forest officer. The drawing of the working plan was taken up, though not completed during the year. *Fifth Circle.*

2. COMMUNICATIONS AND BUILDINGS.

(*a*) *Roads and Bridges.*

11. The details for the new works are given below:—

	M.	F.
Construction of roads	19	...
Inspection path	91	4
Alignment of roads	8	2
Total ...	118	6

and their total cost amounted to Rs. 38,322.

Kollegal.—A road trace over a distance of four miles and two furlongs and the alignment of a new bridle path to a distance of four miles four furlongs and six chains were undertaken.

North Coimbatore.—The new works done were the metalling of roads to a distance of five miles, extension of a road by one mile three furlongs and alignment of cart tracks to fuel coupes over a distance of two miles and four furlongs.

South Coimbatore.—Government sanction for the construction of the new Mount Stuart Ghat road was received in August last. The work in the lower section of the road was given on contract by the Forest Engineer. The contractor's work was very disappointing although given every assistance and advice by Mr. Marshall, the Forest Engineer. A good deal of earthwork and the greater part of the revetment work was done in the first three miles. A start was also made with the masonry work at the commencement of the road. The expenditure on this road was Rs. 21,437, whereas the contractor ought to have earned Rs. 60,000. Some minor works undertaken by the District Forest Officer were (1) laying new tram lines (six furlongs), (2) extension of Aliar road (three furlongs), and opening a new cart track to a fuel working circle (four furlongs).

The bullock tramway continued to work during the year and the timber transported was 13,613–17/32 ton miles, the average lead of tramming being only $3\frac{3}{4}$ miles. As the tramway is the only means of extraction between the worked coupes and the beginning of the carting road, no comparison can be made as regards cost and no data exist on which to base an estimate.

Madura.—The important road works done are—

Vannathiparai-Guruvanuthu road (four miles).

Rajadani-Uthappanacikanur road (four miles five furlongs), and

Senkurichi-Manakattu road to the timber coupes (two miles one furlong).

The first two are in progress.

The Palamalai Missionaries were by executive order permitted to construct a bridle path free from all encumbrances in the Permalmalai reserve of the Kodaikanal range to connect with the ghat road, and they are reported to have constructed the same over five miles at a cost of about Rs. 800. A few roads and bridle paths in the district were as usual maintained out of funds contributed by the Local Fund Department.

Tinnevelly.—The new roads constructed were the road leading to coupe No. I of Kuttalam working circle (seven furlongs) and the extension of the Northern road in Kalakad working circle (seven furlongs); and these are reported to have more than paid themselves by the increase in the amount realised for the coupes. Seventy-five miles of inspection paths were made in Kodamadi and Kannikatti ranges by the Temporary Extra Assistant Conservator in connection with the development scheme for the shola forests at a cost of Rs. 1,119.

(*b*) *Buildings.*

12. The total expenditure on new works during the year was Rs. 14,404 and on repairs Rs. 15,674.

Fifth Circle.

The important new works carried out were: in *Kollegal* the continuation of the construction of the rest house at Cowdalli and the Tannah shed at Kamagarai.

In *Madura* conversion of the old Cumbum Rest house into a Range Office, construction of the Nattam Range Office and the re-roofing of the subordinates lines and inspection sheds.

In *Tinnevelly* the construction of the rest house at Kannikatti, and the inspection sheds beyond Kannikatti and Kodamadi and sheds for rangers and coolies beyond Kuttalam Kalaruvi were undertaken by the temporary Extra Assistant Conservator and are in progress at the close of the year. Cooly lines at Kodamadi and Kannikatti were also undertaken by the Extra Assistant Conservator and completed during the year at a cost of Rs. 1,979.

(*c*) *Miscellaneous.*

13. The expenditure on new works under this head was Rs. 1,820; the important works being the sinking of three wells in *Kollegal* (not completed), one in *North Coimbatore*, one in *South Coimbatore* and improving one in *Madura*. In *South Coimbatore* Rs. 400 was spent on sinking borings at or near Mount Stuart in the hopes of getting a good and adequate supply of water there during the hot weather, but no perennial source could be tapped. Recently, however, an excellent perennial source has been discovered in Karian shola about two miles from Mount Stuart and 500 feet above that settlement. The District Forest Officer thinks that this will finally settle the problem of Mount Stuart water-supply and will go far to help in improving the conditions of life of the staff stationed there during the hot weather. He is therefore arranging to submit proposals for leading the water source in pipes to the settlements.

14. *Telephone.*—The line between Anamalai, Sethumadai and Mount Stuart in *South Coimbatore* was, it is said, working well and was very useful. A proposal has been made by the District Forest Officer to dismantle the branch line from Sethumadai to Tekadi and to relay it between the Range Office at Anamalai and Pollachi sale depot, and also, if possible, to connect Pollachi depot with the District Forest Office at Coimbatore.

3. Protection of Forests.

(*a*) *General Protection.*

15. The total number of new cases reported during the year under the four different heads was 4,718. As the last year's report covered only for a period of nine months, no useful comparison can be made with the number of cases mentioned in that report. Proportionately, however, there was an increase in the number of cases reported and detected in the year under report. The increase is reported to be due to better protection. Of the said 4,718 new cases, only 4,393 were detected; and these, together with the 1,279 cases pending at the beginning of the year, *i.e.*, 5,672 cases, were dealt with during the year. Two thousand and thirteen cases were taken to Court and 3,659 compounded. The number of cases disposed of during the year was 4,156, leaving a balance 1,516 at the close of the year.

Out of 2,013 cases taken to Court 1,239 were convicted and 76 were acquitted, leaving a balance of 696 cases pending disposal by the Court. The percentage of acquittals, however, rose from three in the previous to six in the year, the increase being chiefly in *Kollegal* and *Madura*; and the reason therefor has not been clearly explained.

16. The number of cases compounded in several districts for which compounding fees were collected is shown below:—

District.	Number of cases compounded.	Amount of compounding fees.
		Rs.
Kollegal	326	4,806
North Coimbatore	560	5,086
South Coimbatore	313	5,216
Madura	463	5,184
Tinnevelly	465	6,174
Total ...	2,127	26,466

Fifth Circle.

17. The special patrol party in *Madura* continued to work throughout the year and is reported to have done very good service in the Cumbum range. The protection of forests and the collection of grazing revenue improved and illicit fellings considerably stopped. The party did some useful work such as planting and weeding in the Vannathiparai teak plantation. Forty-two cases were detected by the party and many old warrantees who were successfully evading arrest for years were arrested.

In *Tinnevelly* the patrol party system was introduced for the first time during the year under report. A small party worked in the Nanguneri range from 30th August to 22nd October last and as a result the revenue from grazing and manure leaves increased from Rs. 728 and Rs. 1,091 in 1920-21 to Rs. 1,899 and Rs. 2,743 respectively during the year. Another small party was organized in Srivilliputtur range and this has improved the protection of forests from illicit removals.

18. A reward of Rs. 35 was paid to the subordinates in *Kollegal* for the detection of an important illicit-grazing case. Rupees 2 was paid as rewards in *South Coimbatore.*

(*b*) *Protection from fire.*

19. *Special protection.*—Early burning of about 10 square miles of grassy area was done in *Kollegal* during the year for the protection of the neighbouring sholas in the Doddasampagai reserve and it was a success as the sholas escaped from fire. In *North Coimbatore* the yearly burning system continued and 20½ square miles were burnt at a cost of Rs. 74 and the result is reported to be satisfactory.

Excepting the above, there was no material change in the system of fire protection.

20. The area attempted to be specially protected during the calendar year ending with 31st December last was 277,170 acres and the total cost therefor was Rs. 22,296. The last year's return (Form 72) was for the period of nine months ending with the official year 1920-21. And so no useful comparison can be made with the previous year's figures in area and cost. The area said to have been burnt under special protection was 15,625 acres and the percentage of successful protection was 94·3 against 95·2 in the previous year. This difference is attributed to the exceptionally dry weather last year.

The shola forests of Minchiguli valley in *North Coimbatore* were well protected during the year and they are said to be improving. In *Madura* the pine plantations of the Kodaikanal range were successfully protected during the year under an improved system and consequently there was no fire. The fire protection of sholas in the Ampthill Downs reserve was continued as per the old sanctioned scheme, but the results were not satisfactory as almost the whole of the Downs was burnt. Early burning will be considered for the next year.

21. *General protection.*—The area under this head was 1,785,409 acres and the area burnt 32,700 acres, the percentage of successful protection being 98·2 against 98·1 in the previous year.

22. The total number of fires that occurred from various causes both in the areas under special and general fire protection was 315, the aggregate area burnt being 48,325 acres.

(*c*) *Protection against cattle.*

23. An area of 2,309 square miles, i.e., 68·6 per cent of the total area, was open to grazing of all animals except goats and an additional small area of 323 square miles, i.e., 9·6 per cent, was open to all animals except browsers (sheep and goats).

24. *Incidence of grazing.*—In *Kollegal* the incidence was said to be 8·66 acres per cow unit against 6·7 in the previous year. Most of the remote areas by the side of the Cauvery and Palar rivers, interior of Doddasampagai reserve by the side of the Gundal valley and many thousand acres of steep and precipitious slopes were free from grazing and consequently the incidence was actually more than what is given above. In *South Coimbatore* the incidence was 18·8 per cow unit when calculated from the area open to grazing, but the latter includes much of the shola forests and grass hills of the Upper Anamalais where cattle are seldom or never taken for grazing. In *Madura* the average grazing incidence was 10 acres per cow unit as against 7·5 acres in the previous year and in *Tinnevelly* 2·8 acres per cow unit.

Fifth Circle.

25. The total number of cattle impounded during the year was 17,131 against 10,822 in the previous year and 14,145, the average for the past three years. There was an increase in all the divisions and it was partly due to the fact that the previous year's report covered a period of nine months only and partly to the increase in the number of grazing offences.

26. *Introduction of the forest village system.—Kollegal.* The areas were completely visited by the District Forest Officer for the submission of fresh proposals relative to the introduction of the system; but before the submission of the scheme, the sitting of the Special Forest Committee appointed to remedy the grievances of the ryots of Coimbatore district was awaited. Though the Committee did not sit in the district in accordance with the resolution passed at its sittings in North Coimbatore, the block system of grazing was done away with in this division.

(*d*) *Protection against injuries due to natural causes.*

27. *Spike disease of sandal.*—Spike continues in *North Coimbatore* and *Kollegal*, the forests are being worked on a three-years rotation to harvest the dead trees.

28. *Weeds and climbers—South Coimbatore.*—The 1921 teak regeneration area of about 23 acres and the 1920 rosewood area of about 6 acres were weeded, the method adopted being the clean-scraping of all weeds. The 1920 teak plot required no weeding. The coppice growth in the worked fuel coupes was kept free of weeds and climbers. *Tinnevelly.* Climber-cutting in two coupes of Kalakad Working Circle (378 acres) and weeding the teak plantation at Kariar (5 acres) were done. The beat subordinates during their patrols also did the climber-cutting work in scattered localities.

In the sandalwood working circle of *Kollegal* division climber-cutting was done over an area of 2,000 acres.

29. *Prickly-pear, lantana and strobilanthes.*—The work of eradicating prickly-pear was confined to 13 acres in *Madura* at a cost of Rs. 26, further work having been stopped for want of funds. The results of the operation do not, it is said, seem to be hopeful. Prickly-pear is said to be rarely found in *Tinnevelly* except in some of the plain VI class reserves which are proposed to be disafforested.

Nothing was done for the destruction of lantana in *Madura* for want of funds.

30. *Damage by animals—South Coimbatore.*—Bison and sambur did some damage in the Mount Stuart teak regeneration area by trampling the young seedlings. Sambur damaged also the teak saplings in the experimental plots in Punachi range. *Madura.* Elephants have begun to damage the teak plantations in Vannathiparai reserve by trampling down seedlings and barking several promising teak plants. The question of starting elephant-capturing operations in conjunction with the Travancore Forest Department is under consideration. *Tinnevelly.* With a view to reduce the damage done by Sambur to coppice shoots, the restriction about shooting sambur hinds was removed with the permission of the Collector, but none was shot during the year. The damage caused to the sandalwood and other saplings in Alagarkoil Valley by elephants continued during the year. The elephants uproot trees and damage the crops in the patta lands at the foot of the ghat forest in Srivilliputtur range.

31. *Damage by frost and drought.*—There has been unusual drought in *Madura* during the year. There were it is said long breaks with pouring rains at the end with the result that the teak plants in the Cumbum Valley suffered much and casualties were heavy. The severe frost caused heavy damage to the *Accacia decurrens* seedlings in Kodaikānal, destroying 50 to 60 per cent of the seedlings.

CHAPTER III.—SYLVICULTURE.

(*a*) *Natural reproduction.*

32. *South Coimbatore.*—In the timber forests natural reproduction is very poor as the seedlings cannot compete against the weeds for which reason, the concentrated regeneration method has been adopted generally.

Madura district.—Natural reproduction of Vengai (*Pterocarpus marsupium*) is said to be fair in the Cumbum range and that of Chloroxylon swietenia to be good

in Pillairnatham reserve and also that of Mahogany in the Thirthathotty Valley of the Alagar hills reserve but elsewhere reproduction from seed is generally not satisfactory. *Fifth Circle.*

Tinnevelly district.—In the Padarimalai and Koilteri working circles of the Kannikatti and Kodamadi ranges natural regeneration is much suppressed by strobelanthes, where this pest is not so rampant some regeneration of teak, *Pterocarpus marsupium*, *Albizzia amara and Hardwickia binata* is found. Sandal seeds are said to be found in abundance in Kuttalam range where the species is spreading as it is also in Srivilliputtur range. Natural regeneration in the shola forests is good.

Kollegal division.—Sandal seeded well during the year and satisfactory regeneration has been observed in the less dry part of the districts as it has of satinwood and *Hardwickia binata.*

In *North Coimbatore* sandalwood is reported to be spreading gradually down to the plains as in the Ennamangalam fuel working circle of Bhavani range about 400 saplings have been found in coupes 1—4. There is some regeneration of rosewood and Vengai (*Pterocarpus marsupium*) in the Minchiguli Valley where fine trees of these species are found and steps are being taken to increase them by concentrated operations.

(b) Artificial reproduction.

33. *South Coimbatore.*—At Mount Stuart, *South Coimbatore*, 26 acres which had been cleared of all growth and burnt in 1920-21 were sown with teak 3′ × 3′. These 26 acres consisted of 10 acres in which Pillamarudu (*Terminalia paniculata*) had been sown the previous year, which sowing had been a complete failure, so that we lost the benefit of the burn, which made a great difference in the initial rate of growth of the new teak seedlings compared with that on that of the seedlings on the remaining 16 acres. These 26 acres should have been sown in March 1921, but the work could not be done in time. The whole area is now practically fully stocked 3′ × 3′ and although the rate of growth in the first year is not as much as it would have been with a more normal monsoon the plot should do excellently. An effort was made during the year to increase the area of concentrated regeneration and 133 acres were cleared and burnt during the year. These should have been sown by the end of March 1922, but the sowing was completed a little later. Of these 80 acres will be weeded by contract labour and the balance by the local mulcers. If this contract labour proves to be successful, it is hoped that we shall be able to establish 250 acres of regeneration per annum in future and convert the whole of the working circle into a first-class forest in fifty years.

A start was made to carry out the provision of the working plan as regards finding a suitable underwood for teak by putting out in the first plots sown in 1920 a number of rosewood seedlings. The plot is 25 acres in extent and the balance has been sown with rosewood since the close of the year.

In *Madura district* 33 acres were cleared, burnt and planted with teak at Vannathiparai in the Cumbum Valley. The locality will produce fine teak but the incidence of the rainfall is not so favourable as at Mount Stuart so it is more difficult to get plantations started. Elephants descending from Travancore do some damage and the Conservator of Travancore is being addressed to see if combined operations cannot be taken against them. Five acres were added to the teak plantation at Velancombai. Thirty-one acres were sown as a fire belt round the pine plantations at Kodaikānal but only 40 per cent survived the long drought and frosts.

In the *Tinnevelly district* a commencement was made with experiments on an extended scale to establish regeneration of superior species in the shola forests whose working is under consideration. Two plots of approximately 100 acres each were selected at Kannikatti and Kodamadi and trial operations were conducted combined with planting and sowings. A good deal of experience is being gained but I cannot express an opinion on the results until I have inspected them again. Regeneration after the final clearing will be a much more desirable method in these forest where we can sell both timber and fuel. This can be brought about by the Macaranga system for the present we are gaining useful knowledge which will assist us later if the latter system is eventually adopted. Arrangements have been made for extending the Kodamady and Kariar teak plantations during 1922-23 by 50 acres. The

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growth on this area was sold to a contractor for clearing for nearly Rs. 10,000. A good deal of sowing has been carried out in the Teri forest and other parts with varying success.

In the *Kollegal division* sandal seeds were dibbled by beat guards free of cost, in this way some 3,000 seedlings have been established but many died. In lieu of general dibbling where water is available in streams all through or well in the hot weather the forest guards will clear and fence small plots and sow them with sandal and water the resultant seedlings. Some good results have already been obtained in this way and such plots will form centres for the spread of seeds in the future.

In *North Coimbatore* some experimental work was done in trying to extend the Ainagiri shola above the Minchiguli valley but so far no marked success has been achieved ; the District Forest Officer has been instructed to see if Macaranga will succeed.

(*c*) *Operations for the improvement of the growing stock.*

34. *South Coimbatore.*—It has been decided to abandon the operations in the Punachi range prescribed in the working-plan in favour of extended concentrated regeneration which is a more profitable method of securing regular forest of superior species.

Madura.—Thinnings of *Albizzia amara* coppice shoots were carried out in coupe IV Sirumalai South series of the Sholavandan range and in coupe 2 of the Poonamalai series of Ayyalur range. Removal of thorny creepers was undertaken in coupe 7 of Methugamalai South series of Nattam range and in coupe 7 of Panchanthangi series in the Ayyalur range. Creeper cutting on standards and superior species was carried out in all coupes free of charge by forest guards and all felled coupes were fenced.

Kollegal Division.—Soft wood trees useless for fuel were cut out by the coupe contractors and a certain amount of freeing of suppressed sandal trees was undertaken.

North Coimbatore.—In sandal coupe No. II of Talamalai range and in the Chikkalli coupe climbers on sandal trees were cut over an area of 13,880 acres at a cost of Rs. 200. In Mēttupālayam range improvement fellings were carried out over 710 acres according to the working-plan prescription at a cost of Rs. 670, but it is doubtful if this is worth while continuing and it will be abandoned under the financial stress.

CHAPTER IV.—EXPLOITATION.

1. System of Management.

(*a*) *Major Forest Produce.*

35. The total area under working-plan during the year was 1,066 square miles and the statement below indicates the various sylvicultural systems in force :—

	Area in square miles.	Percentage of total area under each sylvicultural system.
Selection method	47	4·41
Simple coppice	396	37·14
Coppice with standards	125	11·73
Unregulated fellings	272	25·51
Bamboo fellings	45	4·22
Forests for which working-plans have been prepared but not subjected to any definite system of working.	181	16·99
	1,066	100·00

36. Selection fellings were carried out in South Coimbatore, 'simple coppice' in all the districts, 'coppice with standards' in Madura and Tinnevelly. The unregulated fellings were in *North Coimbatore* and *Kollegal* and refer to the removal of spiked sandal trees. The old working-plan lapsed and at present spiked sandal trees are removed on a three years' plan. To that extent the felling is regulated on a short rotation plan. The 181 square miles in the last item merely refers to a shola working circle in *Tinnevelly* which under a sanctioned working-plan is leased for minor produce. There is no timber or other extraction prescribed.

37. In *South Coimbatore* an area of 133 acres was clear-felled for regeneration by dibbling. In *North Coimbatore*, eight fuel coupes of 636 acres and ten bamboo coupes of 21,166 acres not covered by sanctioned working-plan were worked under a preliminary working scheme. *Fifth Circle.*

(*b*) *Minor Forest Produce.*

(i) Bamboos.

38. In two ranges of *Kollegal district* the bamboos continued to be removed under the unregulated permit system, there being no demand for the located coupe fellings. In the remaining range five coupes of 9,800 acres were sold standing to contractors.

The bamboo coupes in the other districts were as usual leased out to contractors.

(ii) Miscellaneous produce.

39. The right to collect all other minor produce (except honey and wax collected departmentally in *Kollegal*) was as usual sold to contractors in all the divisions.

40. Free removal of grass was permitted in *Kollegal* from areas where there were no fires in the previous year. One thousand three hundred and sixty-five tons of fodder grass were removed on permits in *North Coimbatore*.

Stones, thorns and earth were allowed to be removed in *Madura* to a limited extent on permits.

In *Tinnevelly* the right to cut and remove strobilanthes in fuel working circles was leased out for the first time during the year.

41. Grazing was as usual controlled by permits; and the number of animals permitted to graze and the amount of grazing fee realized were 240,491 and Rs. 1,17,189 respectively.

2. Agency of Exploitation.

(i) *Departmental Agency.*

42. *Major produce.*—The extraction of timber and sandalwood was as usual mainly by departmental working. Drag poles also were collected departmentally in *North Coimbatore* and sold to the public.

43. *Minor produce.*—Collection of honey and wax was undertaken departmentally in Kollegal, so also the seeds required for sowing. One hundred and seventy-six bags of teak and other seeds were collected in *South Coimbatore* for sowing in that district and also for supply to other Forest officers.

(ii) *By purchasers.*

44. *Major produce.*—The fuel coupes in all the districts were as usual sold to contractors. One timber coupe in *Madura* and the right to collect spokes and felloes from the top ends of trees felled departmentally in *South Coimbatore* were also leased out to contractors.

45. *Minor produce.*—Thirteen bamboo coupes in *North Coimbatore*, 5 in *Kollegal*, 5 in *South Coimbatore* and 10 in *Madura* and a few coupes in *Tinnevelly* were leased out as usual to contractors. The dead bamboos in Udamalpet range of *South Coimbatore* were sold to a contractor. The other minor produce also was leased out to contractors in all the districts.

(iii) *By right and privilege holders and free grantees.*

46. The quantity and estimated value of produce removed by right and privilege holders and free grantees are shown below:—

—	Timber in thousands of cubic feet.	Value.	Fuel in thousands of cubic feet.	Value.	Bamboos in value.	Grazing value.	Other minor produce.	Total.
		Rs.		Rs.		Rs.	Rs.	Rs.
Right and privilege holders.	..	..	..	..	..	1,502	859	2,361
Free grantees	12	2,429	3	380	..	..	181	2,737

Fifth Circle.

47. *By right and privilege holders.*—In *Madura* the concession to quarry stone and road materials free of charge from the reserved forests and unreserved lands to the departments of Government and local bodies was continued during the year.

48. *By free grantees—North Coimbatore.*—Fourteen palmyra trees of 280 cubic feet and 40 cubic feet of third-class timber were removed from unreserves by free grantees. Two hundred and ninety-one palmyra trees, four long posts and eight short posts amounting in value to Rs. 735 were granted in *South Coimbatore* for rebuilding houses burnt by fire. In *Madura* free grazing in the Ampthill Downs reserve was allowed as usual and for the reconstruction of houses destroyed by fire 931 cubic feet of timber worth Rs. 233 were granted free by the Collector. In *Tinnevelly* the free grants of timber and fuel valued at Rs. 1,841 were made from the unreserves.

3. Outturn and Sources of Forest Produce.

49. The following statement shows the total outturn of major produce and the total value of minor produce from all classes of forests by all Agencies during the year under report :—

Agency of exploitation.	Timber and sandalwood in thousands of cubic feet.		Fuel in thousands of cubic feet.		Bamboos in value.		Minor produce including grazing in value.	
	1920-21. (9 months)	1921-22.	1920-21. (9 months)	1921-22.	1920-21. (9 months)	1921-22.	1920-21. (9 months	1921-22.
By Government agency ..	51 [68]	169	15 [20]	6	131 [175]	641	933 [1,244]	535
By purchasers	225 [300]	594	3,381 [4,508]	2,612	13,840 [18,413]	37,343	1,96,116 [2 60,153]	2,08,826
By right and privilege holders.	..	..	..	..	31 [41]	..	881 [1,174]	2.361
By free grantees	2 [3]	12	3 [4]	3	1 [1	..	936 [1,248]	161
Total ..	278 [371]	775	3,399 [4,532]	2,621	13,973 [18,630]	37,984	1,97,865 [2,63,819]	2,11,883

Note.—The figures in brackets denote the proportionate amounts for one full year of 1920-21 and are given for purposes of comparison with the figures for the year under report.

50. *By Government agency.*—The increase under *timber* was mainly in *South Coimbatore* due to the timber fellings under the Mount Stuart working plan done during the year whereas nothing was done in the previous year on account of the non-disposal of the old accumulated stock. The extraction of a larger quantity of wood for the use of departmental works in *Kollegal* and the collection in *Madura* of dead and windfallen trees as a regular operation also contributed to the increase under this head. The decrease under *fuel* was chiefly in *Kollegal* due to there being no departmental extraction or confiscation of contractors' fuel as was the case in the previous year. The increase under *Bamboos* also was in *Kollegal* due to the extraction of a greater quantity for departmental works than in the previous year. The decrease under *minor produce* was in *Kollegal* due to a smaller quantity of honey and wax collected during the year and in *South Coimbatore* to the quantity of elephant tusks sold being less than that in the previous year.

51. *By purchasers.*—The increase under *timber* was chiefly in *Madura* due to the sale of one timber coupe to a contractor. There was an increase in *Kollegal* also due to a better collection made in the year by Revenue authorities. The decrease under *fuel* was in *South Coimbatore* due to a smaller number of coupes leased out to contractors, in *Madura* to the non-working or part working only of a few coupes sold to contractors and in *Tinnevelly* to the non-working of tank bed coupes owing to the transfer of unreserved lands to the Revenue Department. The increase under *bamboos* was in all the districts and was due to the increased demand therefor and consequently to the additional number of coupes sold during the year. Under *minor produce* the decrease was in *Madura* and *North Coimbatore* due to a fall in the prices realised for this produce.

52. The figures under *right and privilege-holders* and *free grantees* are small and fluctuating and therefore call for no remarks.

CHAPTER V.—FINANCIAL RESULTS.

Fifth Circle.

53. The following statement compares the financial results of the year with those of last year:—

	1921-22.	1920-21.*
	RS.	RS.
Revenue.		
Revenue (deducting refunds)	11,79,770	11,25,798
Expenditure.		
A. 'Conservancy and Works'	3,47,029	2,53,155
B. Establishments	4,36,422	4,08,180
	7,83,451	6,61,335
Surplus ...	3,96,319	4,64,463

* For purposes of comparison the revenue and expenditure for the whole year is taken instead of for the period of nine months only dealt with in the last year's report.

REVENUE.

54. Sixty-seven per cent of the revenue was derived from major produce, 11 per cent from minor produce, 10 per cent from grazing and 12 per cent from miscellaneous items. Of the expenditure 27 per cent was spent on the exploitation of forest 31 per cent on their upkeep and improvement and 42 per cent on miscellaneous items.

55. The increase under revenue was chiefly under I(*a*) *Timber* (Rs. 1,34,657) due to large increase in the quantity of timber extracted and sold in *South Coimbatore* and II(*b*) *Firewood and Charcoal* (Rs. 28,144) owing to better prices fetched for fuel-coupes and sale of larger arrear areas in *Madura* to bring the working plans up to date. There was a decrease under I(*d*) *Sandalwood* (Rs. 135,482) owing to the fall in the prices, the money market being very tight.

56. The revenue outstanding at the end of the year was Rs. 2,34,566, of which Rs. 85,907 fell due within the year. The latter sum includes Rs. 60,389 representing the amount of sale of Arguli tope in *Tinnevelly* district; the purchaser having failed to pay the amount the Board of Revenue has in its Proceedings Mis. No. 906, dated 31st May, last ordered the Collector of Tinnevelly to resell the tope by 1st December 1922. The estimated value of the produce at sale depots was Rs. 82,369 against Rs. 1,03,710 in the previous year.

EXPENDITURE.

57. *A. Conservancy and Works.*—(Plus 93,874). Transport charges on the increased outturn of timber from Mount Stuart forest, commencement of the construction of the new Mount Stuart ghat road, alignment of bridle paths and construction of buildings for development of Ambasamudram range forests and feed and keep of larger number of live-stock account for the increase.

B. Establishments.—(Plus 28,242) Chiefly under Pay and Travelling Allowance of establishments. The transfer of Mettupalayam range with its establishment to this circle from 1st July 1922, the revision of pay of the executive and protective establishments and the introduction of the time scale of pay among the clerical esablishment with effect from 1st March 1921 contributed to the increase.

CHAPTER VI.—RESEARCH AND EXPERIMENT.

58. *Kollegal.*—Experiments with shola extension operations were carried out during the year but no marked success has so far been achieved.

North Coimbatore.—To avoid excessive damage by fire to the forests early burning of grassy areas on hilly slopes in Satyamangalam and Talamalai ranges was done with a very successful result. In this operation special attention has been paid to prevent the fire approaching any shola.

South Coimbatore.—Dibbling of neem and other fuel species seeds was carried out on a small-scale in Udamalpet fuel coupes, but without success.

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Tinnevelly.—The experiments with shola regeneration have been mentioned elsewhere and there is little doubt that success will be achieved. Experiments have been made during the year to get rid of Strobilanthes but no real success has been yet attained.

Madura.—(1) *Experimental Thinning of coppice shoots.*—These observations are continued to be made in the Ayyalur, the Sholavandan and the Nattam Ranges. As reported last year no decided conclusion can be drawn from these experiments at this stage.

(2) *Prickly-pear clear ng and burning.*—This was done over 13 acres in coupe XI Pillaiyarnatham at a cost of Rs. 26 as in previous years. The work had to be left incomplete for want of funds. The result of prickly-pear clearing for the past five years as now prescribed in the working plan must be regarded as a waste of money. One clearing is not at all enough to eradicate the pest and it is doubtful if several clearances are, seeing that the pest is everywhere in the unreserves for seed, to be dispersed by birds and men. However in the area first cleared in coupe XVI in 1917–18, the pest is as bad as before and going stronger.

The experiment to have the stools of Albizzia amara untrimmed as prescribed in the working plan to study its effect on the production of coppice shoots was continued in coupe IV Rajadani and the result is being watched. So far, it shows in a general way that trimmed or untrimmed shoots come up equally well.

CHAPTER VII.—ADMINISTRATION.

CHANGES.

59. The Mettupalayam range of the old Central Coimbatore division transferred to Sixth Circle, was added on to North Coimbatore division with effect from 1st August last, and the Bargur range of the latter division was transferred to that of Kollegal. The Ambasamudram range of Tinnevelly division was divided into two ranges, viz., Kannikatti and Kodamady as the work was too heavy for one ranger. To relieve Range Officer, Pollachi, of a portion of his heavy work, a new Depot range was formed in South Coimbatore division with effect from August 1921.

A list of officers who were in charge of the Circle and of the several divisions is appended to this Chapter.

HEALTH OF THE ESTABLISHMENT AND SANITATION.

60. The health of the establishment was reported to have been fairly satisfactory in Kollegal and Tinnevelly. Smallpox and fever were reported to be very severe in Madura. The casualties reported in all the five divisions together are one forester, eight forest guards, one clerk and one watcher.

Sanitation.—The surroundings of the Mount Stuart settlement in South Coimbatore division were re-cleared and burnt and pools were drained, baled and kerosined as far as possible. Fever however was not defeated and was bad during the hot weather.

TOURS.

61. The Chief Conservator with Mr. Martin, the Consulting Forest Engineer with the Government of India and the Conservator visited the shola forests of Ambasamudram in April 1921 with a view to make preliminary proposals for the exploitation of the shola forests. Again in October last he with Hon'ble Sir Lionel Davidson inspected the regeneration operations in Mundanthorai and Kodamadi forests. The Chief Conservator with the Conservator also visited the South and North Coimbatore districts and in the latter he convened conferences at Satyamangalam and Andiyur with the Members of the Forest Advisory Committee and leading ryots in November and December last.

The Conservator visited all the districts and made inspection of forests during the year. The total number of days spent in camp was 357.

All the District Forest Officers in this Circle toured more than the prescribed number of days during the year under report.

Fifth Circle.

INSPECTIONS.

62. *By Conservator of Forests.*—All the District Forest offices were inspected during the year.

By District Forest Officers.—All the Range offices in each of the five divisions were inspected during the year by the respective District Forest Officers.

AUDIT OF DISTRICT FOREST OFFICE ACCOUNTS.

63. The accounts of Kollegal, North and South Coimbatore District Forest offices for the years 1919–20 and 1920–21 and those of Madura and Tinnevelly for 1920–21 were audited by the Assistant Inspector of Local Fund Accounts and the results are reported to be satisfactory.

VERNACULAR TRAINING SCHOOL.

64. The school, opened in North Coimbatore division from 1st February 1921 and of which mention was made in the last year's report, was wound up on 1st August 1921. Out of the 28 students (8 foresters and 20 forest guards) who underwent training, twelve (six foresters and six forest guards) secured first class and 15 second class certificates, the remaining one (a forest guard) absconded, became insane and subsequently died.

OFFICERS IN CIRCLE CHARGE.

Mr. H. F. A. Wood	Throughout the year.

OFFICERS IN DISTRICT CHARGE.

Kollegal	Mr. Woodhouse Adolphus, Extra Assistant Conservator, 1st to 13th April 1921.
	Mr. J. Sadasiva Ayyar, Extra Assistant Conservator, throughout the remaining period.
North Coimbatore	Mr. C. DuPre Thornton, Deputy Conservator, throughout the year.
South Coimbatore	Captain W. G. Dyson, Deputy Conservator, throughout the period except for 23 days in February when Mr. C. DuPre Thornton, District Forest Officer, North Coimbatore was in charge.
Madura	Mr. K. A. Chengappa, Extra Assistant Conservator, throughout the year.
Tinnevelly	Mr. D. T. Barry, Deputy Conservator from 1st April 1921 to 17th May 1921.
	Mr. George Venugopal, Extra Assistant Conservator, from 18th May 1921 to 31st March 1922.

CHAPTER VIII.—GENERAL.

1. FORMATION AND MANAGEMENT OF PANCHAYATS.

65. The formation of the new panchayats was effected only in *Madura* and three new ones of 3,087 acres in extent were formed there during the year. Of the six reserves in class V all are under the panchayat management except Karadikuttu reserve of 1,352 acres. Attempts to place the latter also under a panchayat proved a failure. The panchayat management in the district is reported to have been on the whole satisfactory.

The four panchayats in *Tinnevelly* district continued to work during the year.

In *Kollegal* no area has been placed under the management of forest panchayats. This division would be a most suitable one for the formation of panchayats if one could secure efficient panchayatdars as there are immense areas of forests and no commercial demand.

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North Coimbatore.—The working of the Andiyur village panchayat was investigated by the Forest Committee and the result recorded in their report. The 12 grazing panchayats in the Mettupalaiyam range transferred to this district are reported to have worked well during the year.

South Coimbatore.—The panchayats in Dharapuram taluk were inspected by the District Forest Officer. It has been reported that the forests in question are so miserable that no amount of careful management could make them anything but bad.

2. Measures for Improving Local Supplies and Facilities.

66. *Manure leaf supply.*—The demand for green manure leaf in *Kollegal* is only limited and this was as usual met from private forests and unreserves. In *Madura* nothing was done by the Forest department in this direction; but steps are being taken by the Revenue officials to encourage the growth of leaf manure by the ryots themselves on their patta lands. In *Tinnevelly* permits for the removal of manure leaves from the reserves of Nanguneri range were issued as usual.

67. *Supply of fuel and Agricultural implements.*—In *Kollegal* the fuel coupes were sold standing to contractors for the supply of fuel for the people of Kollegal. These contractors are bound under a clause in the agreement to supply head loads of brushwood, small timber, and agricultural implements at fixed prices to the villagers. Two working circles were opened for the benefit of the neighbouring villagers and the first coupe in each was sold during the year as an experimentel measure. Attempts to open certain agricultural implement coupes are also being made to meet the wants of ryots where they are required; but there are still large areas of unreserves available and there will be no difficulty in meeting any real demand from the extensive areas of reserved forests when it arises.

In *North Coimbatore* the fuel demand was met from the regular coupes under working plans. A trial will be made of dividing each coupe into two to see if it will help local villagers to purchase coupes for themselves as recommended by the Forest Committee.

The supply of agricultural implements has been a perpetual difficulty in this division, but a trial will be made of a new system as soon as a scheme for it can be made out whereby a ryot will be able to send his own men to cut them under supervision for a small fee.

In *South Coimbatore* the spokes and felloes made out of the top ends of teak trees felled in timber coupes were sold. Drag poles also were collected and sold. Steps are being taken to open the agricultural implement coupes in two of the ranges on the hill slopes under a new system. The fuel demand was met from the fuel coupes under regular working plans.

Madura.—The supply of fuel to *Madura* town was considerably increased during the year by working more arrear coupes and as a result the price of fuel went down at Madura appreciably to the great loss of the coupe contractors in several instances.

68. *Improvement of water-supply in grazing grounds.*—In *Kollegal* a ruined well in Chikailur reserved forest was deepened at a cost of Rs. 724 for the use of cattle in the neighbouring villages. Nothing was done in the other divisions as no funds were available. There is a good deal that can be usefully done were funds available.

3. Timber Transit Rules.

69. There has been no change in the rules during the year and they are reported to have worked satisfactorily. There were a few cases detected under these rules in all the divisions except Tinnevelly.

The sandalwood transit rules for Kollegal and North Coimbatore districts are also reported to have worked well.

4. Jungle Tribes.

70. There were nine sholaga settlements in *Kollegal*, the total area occupied by them being 142·15 acres. The actual area under occupation was not determined by survey. A scheme is being prepared for fixing definitely the extent of land to be brought under cultivation in reserved forests. The sholaga settlements continued to supply labour to the department and they were allowed free cultivation in the areas occupied by them.

North Coimbatore.—The two schools opend to educate the sholaga children had to be closed for want of funds. Free leases have been granted to hillmen to help the department with labour and to protect the forests from fire. *Fifth Circle.*

South Coimbatore. The mulcers and Kadirs at Mount Stuart are all as usual employed on Forest works: but no inducement, it is said, seems sufficient to make more families settle there.

Madura. The attempts made in the previous year to settle some Paliyans to help planting work in the Vannathiparai plantation have been more or less a failure.

5. Mining and Quarrying—Nil.

6. Live Stock.

Elephants.

71. There were 22 elephants in the *South Coimbatore* district at the commencement of the year. Five elephants were captured during the year and one was born. Out of these 28 elephants two died leaving a balance of 26 and their estimated value is Rs. 89,500. Arrangements were made in North Coimbatore district to commence the capturing operation in Mettupalayam range, but want of funds prevented the operation being carried out.

Other Animals.

72. *Bullock and Buffaloes.*—There were 38 bulls and 26 buffaloes at the commencement of the year. Eight buffaloes were purchased during the year at a cost of Rs. 860 and to feed a young elephant a she buffalo was purchased for Rs. 75. Two old bulls were sold and two bulls and one buffalo were shot being quite unserviceable thus leaving a balance of 34 bulls, 33 buffaloes and one she buffalo at the close of the year. The book value is Rs. 5,095.

7. Veterinary Establishment.

73. The Assistant Veterinary Inspector was in charge of the live stock in South Coimbatore division. The Inspector of Live stock did not inspect the live stock in this district during the year.

8. Civil Suits.

74. *Madura.*—The suit filed by a coupe contractor claiming damages referred to in the last year's report is still pending in court and it is reported that it is not likely that it will be proceeded with as the man is dead.

A suit has been filed in the Sub Court against one Alagiri Chetti of Thoppampatty for encroaching an extent of ten acres in Sirumalai north west slopes reserve. The defence pleader has proposed some terms for compromising the suit and the matter is under examination.

One contractor has given notice of suit for the alleged wrong forfeiture of his security deposit and the matter is pending.

9. Control of Unreserved Lands by the Forest Department.

75. There was no control over unreserved land except the sandalwood working circles of Bailur, Madeswaranmalai and Bargur of Kollegal district consisting mostly of unreserved lands and also an area of 866·8 acres of unreserves included in the Bargur sandalwood working circle and exploited for bamboos along with the Thamarakarai bamboo working circle.

H. F. A. WOOD,
Conservator of Forests, Fifth Circle.

22nd July 1922.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1922.

IXTH CIRCLE

INTRODUCTION.

Sixth Circle.

The outstanding event of the year as far as this Circle is concerned was the Mappilla rebellion. One forest guard, a plantation watcher and a tapal peon were killed and though the District Forest Officer and the rest of the establishment managed to escape with their lives, they experienced much hardship and lost all their belongings. With one exception, the Mappilla subordinates remained true to their salt, one of them a peon named Ahamed very pluckily taking a message to Malappuram through country which was entirely in the hands of the rebels. This man was wounded but escaped. The District Forest Officer reports that with a few exceptions the subordinates behaved exceedingly well, and he especially brings to notice the conduct of Rangers Rowland and Kunhiroyan. It was to the latter's staying in the neighbourhood of Nilambur at great risk to himself (he is a Mappilla) that the recovery of the Forest elephants was due, all but one—a recent capture which ran away and joined a wild herd—being recovered. A party of mahouts led by Mada, now an acting forest guard in Mudumalai range, showed very creditable initiative by marching five elephants through infrequented jungle paths up to Kargudi in Mudumalai range. Practically all the forest buildings in Nilambur division were looted and burnt and 75 of the 85 buffaloes were killed by the rebels. The Range office at Mannarghat (Palghat division) was burnt, and the Ranger's quarters were looted. In the Nilambur division and the Mannarghat range, all records were burnt and work was entirely dislocated for about 6 months and it was impossible to float any timber down to the coast; hence very little revenue was realised during the year.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. Alteration in Area.

1. *Reserved forests.*—The area of the reserved forests decreased from 2,030 square miles to 1,846 square miles chiefly due to the transfer of the Mettupalaiyam range to the North Coimbatore division of the Fifth Circle and to the disforestation of eight reserves in Erode taluk..

2. *Reserved lands.*—Three thousand acres in the Sigur range of the Nilgiri district which were disforested in 1920-21 for assignment for cultivation were re-notified under section 4 during the year. The area at the end of the year was 106 square miles.

2. Forest Settlement.

3. No forests were finally settled during the year. Eighty square miles in the Nilgiris were under settlement.

3. Demarcation.

4. Seven miles of new boundaries were demarcated in Wynaad. Some work was done in Nilambur, but details are not available. The usual reclearing of boundaries

South Circle.

was done by subordinates free of cost except in Wynaad and Nilambur. It is reported from South Mangalore that the Mysore-South Kanara boundary commission have finally settled the boundary between Mysore and that division.

4. Forest Surveys.

5. In Wynaad, the Mysore-Malabar boundary adjoining Begur reserved forest from Bavali to Murkal was surveyed by a Revenue Survey Party, while the verification of the remaining portion of the boundary was partly done by the India Survey Party No. VIII. The survey of coupes and plantations was done by the departmental staff in North and South Mangalore, Wynaad and Palghat. The reference maps were maintained.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. Regulation of Management.

6. *Preparation and control of working plans.*—No new working plans were sanctioned during the year, but the new working plan for the Nilambur teak plantations and the adjoining forests has been printed and awaits sanction.

The prescriptions of the existing working plans were worked up to as far as possible with small exceptions.

Most of the working plans in the Circle are out of date and require entire revision.

2. Communications and Buildings.

7. *Roads and bridges.*—Rs. 14,723 were spent on new works and Rs. 33,562 on repairs. The only division in which any new work of importance was carried out was Palghat where the Sappal hill road leading to the Sappal station in Chenat Nair forest was completed at a cost of Rs. 17,494, Rs. 7,057 being spent during the year. In this division, an inspection path connecting Sappal with Muthikulam in the Attapadi Valley was aligned and roughly constructed at a cost of Rs. 1,539, and 21½ miles of inspection paths in two of the Attapadi blocks were aligned and partly constructed at a cost of Rs. 1,243. The chief repairs carried out were the remetalling of the Olavakode-Dhoni road and the metalling and repair of the Chinnar-Iruttupallam road; Rs. 10,973 were spent on the former which is now in excellent condition and Rs. 2,871 on the latter.

8. *Buildings.*—Rs. 40,223 were spent on new works and Rs. 12,632 on repairs. The most important works were—

Palghat division—

(1) Buildings at Sappal station. These consist of rest-house, rangers', foresters' and guards' quarters and cooly lines; Rs. 23,593 were spent on their partial construction.

(2) An inspection shed at Olavakode on which Rs. 2,526 were spent.

Nilambur division—

The Nilambur Circuit house was completed at a cost of Rs. 13,847, Rs. 6,934 being spent during the year. It had scarcely been completed when it was burnt by the Mappillas.

Nilgiri division—

A range office at Kargudi was partly constructed at a cost of Rs. 1,068, and the Bangi Tappal rest-house was enlarged at a cost of Rs. 895.

9. *Miscellaneous.*—No important works were undertaken by the Department. The Public Works Department commenced work on the improvement of the Paishwani river, and carried out a considerable amount of blasting. I understand that about Rs. 14,000 were spent on this work.

3. Protection of Forests.

Sixth Circle.

(a) *General protection.*

10. The following statement compares the number and classification of forest offences reported during the period under review with those of the previous nine months :—

Cases.	Injury to forests by fire.		Unauthorized felling.		Unauthorized grazing.		Other offences.		Total.	
	9 months of 1920-21.	1921-22.	9 months of 1920-21.	1921-22.	9 months of 1920-21.	1921-22.	9 months of 1920-21	1921-22.	9 months of 1920-21.	1921-22.
Cases taken to court ..	10	15	146	78	86	17	38	22	280	132
Cases compounded ..	21	24	741	855	291	146	125	76	1,178	1,101
Cases undetected ..	94	82	6	7	..	..	..	5	100	94
Total ..	125	121	893	940	377	163	163	103	1,558	1,327

11. It will be seen that the number of offences during the year under review is considerably less than the total for the nine months of the previous year.

The decrease occurred chiefly in South Mangalore and Palghat. In South Mangalore, it is attributed (1) to impounding cattle straying in reserves instead of treating such cases as offences as was done in previous years, (2) to the fact that more timber and regeneration work was in progress than heretofore with the result that rangers and foresters had less time to supervise the protective work of the guards, and (3) to the levy of heavier compounding fees. The District Forest Officer, Palghat, has not explained the fall.

12. The percentage of cases prosecuted was 12·7 and the percentage of convictions in prosecuted cases was 82·5. The amount of compounding fees realized was Rs. 23,848 as compared with Rs. 10,509 in 1920–21. This large increase is chiefly accounted for by the realization in The Nilgiris of a heavy compounding fee in a case of illicit removal of a large quantity of sandalwood.

A sum of Rs. 167 was distributed as rewards to informers and subordinates in North and South Mangalore and The Nilgiris.

(b) *Protection from fire.*

13. The period dealt with is the calendar year 1921. The system of protection remained unchanged. The area over which protection was attempted was 881·85 square miles as compared with 865 square miles during the previous year. The year was a favourable one and 98·58 per cent of the above area was successfully protected. The cost per square mile successfully protected was Rs. 24. Seven thousand nine hundred and seventy-two acres were burnt, the only serious fire being one which was evidently started maliciously in the Cairnhill plantation (Nilgiris) and which burnt 75 lots of firewood.

14. It was decided during the year that in the Mudumalai and Sigur ranges of The Nilgiris, the Chedleth range of Wynaad and the Uppinangadi range of South Mangalore the system of early burning should be introduced for 1922, and early burning in some of these localities was commenced towards the end of 1921. The results will be dealt with next year.

General protection.—The area under general protection was 653,946 acres of which 5,439 acres were burnt.

(c) *Protection against cattle.*

15. There was a decrease in the area closed to grazing from 405 to 340 square miles, chiefly due to the opening to grazing of 57 square miles in Wynaad previously closed. This area was thrown open to grazing as no possible good was done by keeping it closed in a country where there are so few cattle. Twenty-nine per cent of the total area was open to all animals except goats and 53·5 per cent was closed to browsers.

16. The incidence of grazing has not been referred to by District Forest Officers except those of South Mangalore and Palghat. In the former it is 15 and in the

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latter 9·4 acres per cow unit. In Palghat, however, the incidence is by no means accurate as the calculation takes into account inaccessible areas which are not resorted to.

17. Two thousand one hundred and seventy-one cattle were impounded during the year as against 2,189 for the nine months of the previous year.

(d) Protection against injuries from natural causes.

18. The only work undertaken was the collection of information regarding the attacks of teak defoliators in the Nilambur plantations, but the reports made by the foresters deputed for this work were burnt in the Mappilla rebellion.

CHAPTER III.—SYLVICULTURE.

(a) Natural reproduction.

19. The seeding of most of the deciduous species is reported to have been good, *Dalbergia latifolia* in South Mangalore having produced a prolific crop. *Hopea parviflora* in Chenat Nair and in Kanara, and *Artocarpus hirsuta* in the latter district seeded well.

20. A heavy improvement felling in the Jalsur East forest in South Mangalore which was undertaken in the interests of the natural crop of young *Hopea* and *Artocarpus* found there has had a wonderful effect, some 200 acres now being stocked with a dense crop of established *Hopea* seedlings; a small portion of this area is thickly covered with *Artocarpus hirsuta* seedlings some 5 feet high. The fellings in the Chenat Nair forest in Palghat could not be carried out to the extent intended, partly owing to the Mappilla rebellion and partly because it was found that the cost of extraction without mechanical means of haulage was too heavy to permit of the sale of the timber at a profit, but the seedlings on the area felled over in the previous year have derived great benefit from removal of the canopy and are in promising condition. The casualties in the dry season were light. I discovered a large area fairly fully stocked with young *Hopea* varying in height from 1 foot to 20 feet in the eastern and drier part of the Chenat Nair forest; this is interesting as showing that it should not be difficult to raise this valuable tree even on the lower slopes, provided that there is sufficient shade. A plot of some 15 acres in the felled area in this forest which was burnt in 1920 in order to get rid of felling debris has during the year become stocked with a natural young crop of *Acrocarpus fraxinifolius*; the young trees are exceedingly vigorous and many of them are upwards of 15 feet in height.

(b) Artificial reproduction.

21. *Regular plantations.*—Eighty-three acres of old teak plantation and 80 acres of natural forest in Nilambur division which were clear felled in the previous year were planted with teak. The outbreak of the Mappilla rebellion however prevented the execution of weeding and tending operations and practically the whole area had to be resown or replanted since the close of this year. Twenty-one acres of natural forest in this division were also clear felled and sown up as an experiment with various species other than teak. This area could not be weeded; the District Forest Officer has not reported whether the seedlings have survived or not.

22. In the Nilgiri division, 100 acres were prepared for planting during the current year with *Eucalyptus eugenioides* and *paniculata*.

23. In the Palghat division, 155 acres on the lower slopes of the Chenat Nair forest previously felled for firewood were sown with *Hopea parviflora* and *Artocarpus hirsuta*. Germination was excellent, but the mortality was very high in the dry weather which was unusually long, and the percentage surviving at the end of the season was only about five. The slopes in question are very hot and the soil is shallow; it will be necessary to wait a few years longer in order to obtain more shade from the coppice growth before attempting to introduce these species, though, as stated in paragraph 20, the fact that on a similar and drier slope further east there is plenty of natural regeneration of *Hopea* points to the suitability of the slopes in question for raising this species.

24. In North and South Mangalore, sowing of *Hopea parviflorá* and *Artocarpus hirsuta* was continued. A good deal of seed failed to germinate and vacancies were replaced with *Hopea* seedlings from neighbouring forests. The results have been very favourable except in one locality where the forest was maliciously burnt by adjoining villagers; 390 acres were treated in the Parappa, Porkala and Padnur forests of South Mangalore, and 645 acres in the Jattukattumalai and Someshwar forests in North Mangalore. For sowing during the current year the soil was prepared over a somewhat larger area by digging with mamotties the patches to be sown. This has resulted in very much better germination. *Sixth Circle.*

25. *Taungyas.*—No taungya plantations were made during the year.

26. *Cultural operations.*—Sandal seed was sown over an area of 27½ acres at Kargudi in the Nilgiri division, 25 acres having been sown during the previous year. The growth of the seedlings—which have all been fenced—is satisfactory.

(c) Operations for the improvement of the growing stock.

27. Owing to the Mappilla rebellion, no thinnings were undertaken in the Nilambur teak plantations, where this work is now in considerable arrears. Thinnings and clearings were undertaken in some of the teak plantations in Wynaad division; the work here is gradually being brought up to date. The Pilarkan forest in North Mangalore where the crop is practically a pure forest of *Hopea parviflora* in the pole stage was marked for a fairly heavy thinning and the marked trees are now being felled. In South Mangalore, an improvement felling was carried out over some 350 acres of the Nalkur forest where there is a valuable young crop of *Hopea parviflora* seedlings which only require admission of light to become established. In the Chenat Nair forest of Palghat division, young seedlings of the valuable species in the area felled over in 1920–21 were freed from suppression. In the Nilgiris, an improvement felling was carried out in the Burliyar sandalwood block with good results to the sandal crop, and the usual improvement fellings were undertaken in the Mudumalai forest, though in a much heavier degree than hitherto. The Mudumalai teak plantation was thinned, as were also coupe 5 of Newman (*Eucalyptus globulus*), compartment 6 of Muthinad (*Eucalyptus globulus*), compartment 9, Block VI of Aramby (*Eucalyptus punctata*) and the *Pinus longifolia* plantation in Cairn Hill. The *Cryptomeria Japonica* plantation in the same forest was cleaned.

CHAPTER IV.—EXPLOITATION.

(a) System of Management.

(i) Major Forest Produce.

28. Exploitation looms large in the politics of the sixth circle and has been the subject of continued discussion and careful attention during the year. The State possesses in this circle about 875 square miles of high forest which it has been very roughly estimated contains some ten million tons of exploitable timber. The world is short of timber and yet when—as happened during the year—work is dislocated in the Nilambur Valley which, owing to the facility with which timber can be extracted by floating, is the only locality in which exploitation on any considerable scale has hitherto been attempted, the circle works at a loss. This anomaly is due to the almost total absence of facilities for the extraction of timber more especially in the evergreen forests of the Western Ghats. With a view to tapping the resources of the most accessible of the Ghat tracts (the Chenat Nair forest), a scheme which had been sanctioned in the previous year was put into execution in 1920–21 and work was commenced on the construction of roads, dragpaths, slides and buildings for the staff, and some 700 tons of timber (much of it of species unknown to the market) were extracted and sent to the Kolar Gold Fields, the authorities there having agreed to test the suitability of the various timbers for mining purposes. Mr. C. S. Martin, the Consulting Forest Engineer to the Government of India, visited the forest in March 1921 and gave it as his opinion that provided modern methods of logging were installed the exploitation of the forest was likely to prove a paying proposition. The work begun in 1920–21 was therefore proceeded with during the year under

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report, and at its close a considerable length of roads and dragpaths had been constructed, and the buildings to house the staff were nearing completion. The extraction of timber was continued, but after the more accessible portions of the forest had been worked out it became apparent that with the gradually increasing lead the cost of extraction by manual and animal power was prohibitive. For this reason and also on account of the scare occasioned by the Mappilla rebellion, the quantity of timber extracted was considerably less than had been intended. Eighty-six thousand four hundred and eight cubic feet of timber were extracted, 61,896 cubic feet of which were supplied to the mines. The balance was found on extraction to be unfit for mining purposes; part of it was converted and sold locally and part remains to be disposed of. The agreement with the mines under which they accepted all the timber extracted came to an end during the year, and a fresh arrangement was made under which certain timbers only are supplied at various prices. Two Holt five-ton caterpillar tractors—one of which is fitted with a winch —were purchased towards the end of the year as well as a large quantity of logging tools and gear. Owing to sickness among the staff it was not possible to commence serious work with the tractors during the year.

29. The results of the work hitherto carried out have conclusively proved that it is impossible to undertake exploitation on any considerable scale in such difficult country (especially when it is necessary to work with expensive machinery) by means of the ordinary divisional forest organization, and proposals have since been submitted for the formation of an exploitation division or unit which shall be entirely separate from the forest division.

30. The refusal of the mines to continue to accept all the timber extracted has resulted in our being unable to dispose of certain timbers, which constitute some two-thirds of the forest crop, as they are unknown to the local market It is obvious that in such difficult country as the slopes of the Western Ghats where expensive machinery is essential for moving the timber exploitation cannot prove profitable unless the whole crop can be disposed of. Our efforts must therefore now be concentrated on proving that the timbers hitherto regarded as useless are suitable for certain purposes. There is a huge demand in India for sleepers and boxes, one oil concern in South India requiring 30,000 boxes per month. Steps are now being taken to have certain of the commonest timbers tested at Dehra Dun as to their suitability for sleepers, and it is hoped shortly with the help of a local sawmill to test the market by placing on it considerable quantities of the various softwoods in the shape of box shooks. Pending the results of these experiments, it is not intended as was originally proposed to set up a sawmill at Olavakode, and for the present capital expenditure will be confined to the gradual improvement of the means of transport.

31. The different sylvicultural systems in force were—

Clear fellings.—In Wynaad, 50 acres in the Chedleth range and 39 acres in the Begur range were clear felled; these areas were sown with teak after the close of the year. The usual clear fellings in the Nilambur division were not carried out owing to the Mappilla rebellion.

Uniform method.—The fellings in the Chenat Nair forest come under this category and are of the nature of final fellings. The area felled over was 66 acres.

Selection method.—About 300 acres were felled under this method in North and South Mangalore.

Improvement fellings.—Fellings of this nature were carried out over an aggregate area of 1,010 acres in North and South Mangalore and the Nilgiris.

Simple coppice and coppice with standards.—About 1,136 acres were worked under the former and 224 acres under the latter system.

Unregulated fellings.—These were confined to unreserved lands. About 10 tons of sandalwood were extracted in North and South Mangalore and the Nilgiris.

(ii) Minor Forest Produce.

32. *Bamboos and miscellaneous produce.*—As usual these were leased out with certain exceptions. In Wynaad, a small quantity of bamboos was cut departmentally in Kanoth range and carted to Tellicherry to test the market with a view to

future working, and in Nilambur the bamboos required for floating timber were extracted departmentally. In the Mudumalai range of the Nilgiris, minor produce was collected departmentally. Permits for the removal of bamboos and reeds were issued in South Mangalore and Wynad. The right of collecting nux-vomica seed was leased out in North and South Mangalore divisions. *Sixth Circle.*

Fodder grass and hay.—Fodder grass was leased out in Bolampatti and Palghat ranges of Palghat division. No hay was made.

Grazing.—This was, as usual, regulated by the issue of permits. The revenue realized was Rs. 29,144 as compared with Rs. 36,211 during the previous nine months. The fall in this revenue is chiefly due to the transfer of the Mēttupālaiyam range to the Fifth Circle.

(*b*) *Agency of exploitation.*

(i) Departmental Agency.

33. The quantity of major produce exploited was 30 per cent of the total outturn and would have been greater had it not been for the closure of operations in Nilambur. A larger quantity of timber was extracted in Wynaad, Palghat and the Nilgiris; in Wynaad clear fellings were undertaken departmentally, in Palghat the Chenat Nair exploitation operations yielded an increased outturn, and in the Nilgiris the improvement fellings were conducted more intensively than in previous years.

About 5½ tons of *Myristica canarica* seed were collected in South Mangalore for the supply to the Eastern Development Corporation at their cost for research purposes.

(ii) By purchasers.

34. *Major produce.*—The extraction was mainly confined to fuel from coupes sold standing to contractors.

(iii) and (iv) By right holders and under privileges and free grantees.

35. The quantity and value of forest produce removed under this head are given below:—

—	Timber in thousands of cubic feet.	Value.	Fuel in thousands of cubic feet.	Value.	Bamboos.	Grazing and fodder grass.	Other produce.	Total value.
		Rs.			Rs.	Rs.	Rs.	Rs.
Right holders	18	7,180	..	..	..	..	..	7,180
Free grantees	2	185	..	..	4	811	9	1,009

(*c*) *Outturn and sources of forest produce.*

36. The total outturn of *major produce* and the value of *minor produce* extracted from all classes of forests by all agencies during the year under report were:—

—	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos.	Gross value of minor produce including grass and grazing.
			Rs.	Rs.
1921-22	823	2,330	17,897	65,143

The fall in the quantity of timber and bamboos is chiefly due to the stoppage of work in Nilambur. No useful comparison can be made with the figures of the previous year relating to other produce as the latter include the Mettupalaiyam range which is no longer in the circle.

The total number of cattle for which grazing was provided in the various classes of forests was 106,335.

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CHAPTER V.—FINANCIAL RESULTS.

37. The revenue and expenditure for the year are compared below with those of 1920-21 (whole year).

	*1920-21.	1921-22.
	RS.	RS.
Revenue	10,19,975	8,40,759
Refunds	2,358	1,305
Net ...	10,17,617	8,39,454
Expenditure—		
Conservancy and Works	6,47,908	6,56,378
Establishment	3,60,081	4,40,358
	10,07,989	10,96,736

* Includes figures of Mettupalayam range transferred to Fifth Circle.

38. The decrease under revenue is chiefly due to the stoppage of operations in Nilambur.

The increase of expenditure under Conservancy and Works would have been greater if normal conditions had obtained in Nilambur. It is due partly to the purchase of tractors and tools for exploitation work in Palghat, and partly to extended timber operations in Wynaad.

The increase under establishments is due to the revision of pay and travelling allowance and to the formation of the Sixth Circle towards the end of the previous year.

39. Eighty-two per cent of the revenue was derived from major produce, 7 per cent from minor produce, 4 per cent from grazing and 7 per cent from miscellaneous sources.

Fifty-three per cent of the expenditure was incurred on exploitation, 30 per cent on upkeep and improvement of forest and 17 per cent on miscellaneous items.

The revenue outstanding at the close of the year was Rs. 1,84,909.

CHAPTER VI.—RESEARCH AND EXPERIMENTS.

40. Experimental work was continued at Dhoni, Nilambur, Nedungayam, Parappa and Nalkur. At Dhoni, the work chiefly consisted of nursery experiments in connection with the period during which seeds (chiefly of the evergreen species) can retain their power of germination, and with the treatment of seed. At Nilambur and Nedungayam where the underplanting experiments conducted in 1920 had proved a failure, they were repeated, *Hopea* and *Artocarpus hirsuta* being sown under young teak crops. Owing to the Mappilla rebellion it was impossible to keep the plots under observation. In Parappa and Nalkur (in South Kanara) further study was devoted to the behaviour of young *Hopea* crops after exposure to varying degrees of light, and some interesting results in regard to the increase in height growth due to removal of part of the canopy were obtained. The experiments in connexion with the germination and treatment of seed have not been long enough in progress to yield any definite results.

41. In the Nilgiris, the District Forest Officer sowed the seed of seven species of Burmese oaks in the Keti plantation, and raised a few seedlings of *Juniperus procera* (seed obtained from Kenya) to be planted out during the current year. In South Mangalore stumps of *Hopea parviflora* and *Artocarpus hirsuta* were prepared at the end of the year to be planted out in the current year. The period laid down for the experimental seasoning of the timber of *Hopea Wightiana Eugenia Garderi*, *Hardwickia pinnata*, *Valeria Indica*, *Alstonia scholaris*, and *Ficus asperrima* in South Mangalore and Wynaad expired during the year, and the experiments were examined by Messrs. Sweet and Teesdale from Dehra Dun. Their report is awaited.

CHAPTER VII.—ADMINISTRATION.

Sixth Circle.

42. During the year under report, the Central Coimbatore and South Malabar divisions were rearranged, the Mettupalayam range being transferred to the Fifth Circle, and the Mannarghat range to Central Coimbatore which was renamed the Palghat division. The South and North Malabar divisions were renamed the Nilambur and Wynaad divisions respectively.

43. *Tours.*—I inspected all the divisions in the Circle as well as some of the Coorg forests. District Forest Officers spent more than the prescribed number of days on tour except those of North and South Mangalore, Nilambur and the Nilgiris. The short touring in North and South Mangalore is due to the fact that for nearly four months both divisions were in charge of one officer, and that in Nilambur to the Mappilla rebellion. The period of six months' minimum touring does not apply to the Nilgiris.

44. The Chief Conservator visited the Chenat Nair forest in Palghat and the Nilambur teak plantations. He also held a conference at Mangalore in December 1921 attended by the members of the Legislative Council, other leading gentlemen of the South Kanara District and the local officials, in which certain questions relating to forest grievances and the future development of the forests were discussed.

45. *Inspection.*—All the District Forest Offices in the Circle except Nilambur—where all the records were destroyed—were inspected by me. All the range offices were inspected except two viz., Puttur (in South Mangalore), and Mannarghat (in Palghat). Puttur range office was inspected after the close of the year.

46. *List of offices audited.*—The accounts of North and South Mangalore and the Nilgiri divisions were audited, and the results were generally satisfactory.

47. *Vernacular Training School.*—No school was held in this circle.

48. *Health of the establishment and sanitation.*—Three Foresters, two guards and six elephant-men died of malaria, and two guards of cholera. The stations at Benne and at Kargudi in the Nilgiris were cleared of tree growth to improve the sanitation, and a new well was dug near the Coolie lines at Kargudi. A scheme for installing a hydraulic ram at Kargudi is under consideration.

Anti-malarial works were undertaken in the Dhoni Valley with markedly good results, very little malaria being reported there. The health of the men living at Sappal in Palghat division which it was hoped would be free from malaria was very unsatisfactory, practically the whole establishment being prostrated by malaria. No anopheles have been found there however, and in spite of strenuous denials I strongly suspect that the malaria was contracted during visits to the villages at the foot of the hill.

CHAPTER VIII.—GENERAL.

(i) Formation and Management of Panchayats (to include Forest Village System).

49. The panchayat system is confined to Palghat division. The management by the Ettimadai, Madukkarai and Sundakkamuthur panchayats is reported to have been unsatisfactory, while the eight panchayats formed under the Forest Village System in the Erode taluk are reported to be working satisfactorily. Proposals for the formation of panchayats under the Forest Village System in South Kanara are still under consideration.

(ii) Measures for Improving Local Supplies and Facilities.

50. In North and South Mangalore where the chief demand is for leaf manure, the question will be considered in connexion with the proposals for the formation of panchayats. In the latter division, as during the previous year a contractor has been found to purchase fuel in the forest coupes and to sell it at Mangalore at a fixed rate in order to control the prices in that town. No measures were called for in the other divisions.

Sixth Circle.

No measures for the improvement of water-supply were called for, practically the whole circle being blessed with a copious rainfall.

(iii) TIMBER TRANSIT RULES.

51. These are reported to have worked satisfactorily.

(iv) JUNGLE TRIBES.

52. There is nothing of any importance to report.

(v) MINING AND QUARRYING.

53. The District Forest Officer, Nilgiris, has not reported on the result of prospecting for mica in the Mudumalai forest referred to in the last report.

(vi) LIVE-STOCK.

(*a*) *Elephants.*

54. There were 99 elephants in stock at the beginning of the year. Seventeen were captured and one was born in captivity. Nine died and one—a recent capture—ran away at the outbreak of the Mappilla rebellion and has not been traced. Of the elephants which died, four were young calves, and one—a fine mukna—died of wounds received during the rebellion. The number on hand at the end of the year was 107.

(*b*) *Other animals.*

55. There were 137 buffaloes and 11 bullocks on hand at the beginning of the year. Seventy-two buffaloes and 12 bullocks were purchased during the year. Sixteen baffaloes died and 75 were butchered by the Mappillas during the rebellion leaving the stock at the end of the year at 118 buffaloes and 23 bullocks. The buffaloes were employed in the Chenat Nair forest and in the Wynaad division for dragging timber.

(vii) VETERINARY ESTABLISHMENT.

56. The Veterinary Assistant stationed at Nilambur was transferred owing to the rebellion and no one has yet been posted in his place. The Assistant at Gudalur continued to be in charge of The Nilgiris and Wynaad stud.

(viii) CIVIL SUITS.

57. There were no new suits during the year. The two referred to in the last year's report in Wynaad and Nilambur are still pending. In South Mangalore, an appeal was filed by Government before the High Court against the decision of the Sub-Judge, South Kanara, in favour of a contractor whose timber was confiscated as it was not removed within the time allowed.

(ix) CONTROL OF UNRESERVED LANDS BY THE FOREST DEPARTMENT.

58. There is nothing to report.

OOTACAMUND,
28th July 1922.

H. TIREMAN,
Conservator of Forests, Sixth Circle.

ENCLOSURE

Statement showing sanctions for works exceeding Rs. 5,000 accorded under the powers delegated in G.O. No. 1755, Development, dated 17th September 1921.

Name of work.	Total cost.	Expenditure incurred in the year.	Remarks showing how the cost was met—portion met from the budget allotment and portion met from other sources.
	Rs.	Rs.	
Regeneration operations in Chenat Nair reserve, Palghat, division, during 1921-22	6,000 + 300	6,302	Rupees 2,600 provided in the budget. Balance met by reappropriation from other sources. Excess expenditure, Rs. 2.

ADMINISTRATION REPORT OF THE MADRAS FOREST COLLEGE, COIMBATORE, FOR THE PERIOD FROM 1ST APRIL 1921 TO 31ST MARCH 1922.

CHAPTER I.

CONSTITUTION.

Staff.—Mr. F. L. C. Cowley Brown, the permanent Principal of the College who was on long leave has now retired from service.

The writer of this report was Principal throughout the year under review.

Senior Instructors.—The posts of Senior Instructors were held by the following officers during the year under report :—

Name of officer.	Period.
Mr. J. H. Longrigg	From 1st April 1921 to 11th July 1921.
Mr. W. C. Hart	From 12th July 1921 to 31st March 1922.
Mr. R. B. Cornwell	From 1st April 1921 to 15th July 1921.
Mr. G. C. Robinson	From 6th August 1921 to 31st March 1922.

Mr. W. C. Hart reported himself for duty at the College on the forenoon of 2nd July 1921, whereas he took charge of the office of Instructor on the afternoon of 11th July 1921. The officer was considered during the intervening period to have been attached to the Forest College.

Junior Instructors.—The following officers held the posts of Junior Instructors during the year under report for the periods noted against each :—

Name of officer.	Period.
Mr. Muhammad Abdul Karim	From 1st April 1921 to 19th July 1921.
Mr. E. K. Krishnan	From 20th July 1921 to 31st March 1922.
Mr. M. R. Sundaram Ayyar	From 1st April 1921 to 18th January 1922.
Mr. A. R. Brand	From 23rd February 1922 to 31st March 1922.

Sub-Assistant Surgeons.—The two posts of Sub-Assistant Surgeons were held by Messrs. Yawseen Khan Lodi, K. Narayana Nayar, V. Govindakutti Nayar and S. Manjunatha Baliga. These officers delivered lectures in First Aid and Camp Hygiene in camp. First-aid lectures were delivered in Headquarters to the students of the Senior Division by the Medical Officer in charge of the Lawley Road Dispensary.

Instruction in physical training, gymnastics and drill were, as usual, given to the students of both the divisions by the College Havildars.

In addition to the ordinary bi-weekly drills during the year under report the students did physical training every day for 15 minutes with beneficial results, between the second and third lectures in the cold weather, and before lectures in the hot weather.

Board of Visitors.—Mr. S. Cox, C.I.E., I.F.S., the Chief Conservator of Forests was ex-officio President of the Board of Visitors throughout the year under report.

The following officers were on the Board during the year :—

Mr. H. A. Latham	Mr. H. Tireman
„ H. F. A. Wood	„ C. E. C. Fischer

Mr. A. B. Jackson ... ... On 1st April 1921 and from 2nd September 1921 to 31st March 1922.
„ J. S. Soot ... ... From 1st to 15th April 1921.
„ D. T. Barry ... ... From 26th May 1921 to 7th December 1921.
„ H. C. Bennett ... ... From 8th December 1921 to 31st March 1922.

CHAPTER II.

INSTRUCTION.

(1) *Teaching.*

Lectures were delivered to the students in accordance with the College time table.

The 1919–21 division who were examined in June 1921 were below the average in intelligence and efficiency. No Honours certificates were awarded and none were deserved. One or two men were indeed lucky to get their higher standard certificates. Details are given later.

The revised time table introduced on 1st August 1921 has worked well, as also has the revised system of touring, by which the first long headquarters term is relieved by a three weeks camp in the middle, at which the theory already learnt is put into practice.

The 1920–22 division, the present senior year, is a promising one; in general ability, commonsense and efficiency the students are well above the average, and we may confidently expect several of them to obtain Honours certificates. In this year are two private students and both are considerably above the average. It has usually been my experience that the private students are the best, and this is natural as they choose Forestry as their profession of their own free will. We must look forward to the time when we have worked through our Deputy Rangers, and are able to promise Government appointments to such private students as do well at the College. Then we may expect to get a really clever and efficient class of Range officer.

At the commencement of the year under review there were in this division 34 students. Of these one was withdrawn from the College for incapacity. Two students of the 1919–21 division who had been withdrawn from the College in November 1920, were re-admitted under the orders of the Chief Conservator of Forests to undergo their second year course. Thus the strength of the division has been 35 since August 1921.

The final examination in physical science for this, the 1920–22 division, was held in June 1921.

The Chief Conservator's Prize for the best student of this division was awarded to P. Sithapathi Ayyar.

The 1921–23 division, the present juniors, have improved considerably since their arrival. It has been necessary to dismiss one of them for misdemeanour and to send down three for inefficiency. One has been withdrawn by the deputing authority.

The year commenced with a strength of 34 and this has therefore now been reduced to 29. Severer disciplinary measures than usual were necessary before they realized their position, responsibilities, and privileges. They are however now settling down well.

An innovation introduced in August last was the constitution of a Demonstration Theatre in Beddome Lecture Hall, for greater facility in imparting instruction in Utilization and Botany. At these lectures the Curator of the Museum has assisted as Demonstrator with very beneficial results.

(2) *Results of Examinations.*

The Board of Visitors met at Coimbatore on 28th June 1921, and remained till 30th June 1921, on which date the prizes and certificates gained by the students of the 1919–21 division were given away.

The final examination for these students was held in June 1921. Twenty-eight students appeared for the examination and the following list shows the certificates awarded in the order of merit :—

Rank.	Name of student.	Name of Circle, State or Province to which attached.
	Madras Ranger Honours—Nil.	
	Madras Ranger Higher.	
1.	T. P. Palanikumaran	Fourth Circle, Madras.
2.	K. R. Murjani	Bombay.
3.	N. M. Karumbayya	Coorg.
4.	K. Raghuraman	Third Circle, Madras.
5.	D. Krishnaswami Ayyar	Second Circle, Madras.
6.	V. N. Subrahmanya Ayyar	Do.
7.	C. S. Ganapathi (N.C.)	First Circle, Madras.
8.	A. Sitharamayya	Third Circle, Madras.
9.	C. K. Abyankar	Bombay.
10.	P. Sankunni Nayar	Fifth Circle, Madras.
11.	C. S. Ganapathi	Coorg.
12.	C. K. Gulrajani	Bombay.
13.	A. R. Manual	Fifth Circle, Madras.
14.	K. Venkatesan	First Circle, Madras.
15.	M. P. Philip	Fifth Circle, Madras.
16.	B. S. F. Lebbai	Ceylon.
17.	K Raghavan	Sixth Circle, Madras.
18.	T. Perumal	Fifth Circle, Madras.
19.	V. R. Kamalapur	Bombay.
20.	T. L. F. Perera	Ceylon.
21.	B. Krishna Rao	Second Circle, Madras.
	Madras Ranger Lower.	
22.	T. M. Krishnamachari	Second Circle, Madras.
23.	G. Venkatasubba Rao	Do.
24.	S. Nageswara Ayyar	Fourth Circle, Madras.
25.	S. Ramalingam	Do.
26.	I. Ramamurthi	First Circle, Madras.
27.	Nur Ahmed	Hyderabad.
28.	B. N. Dev.	Bombay.

The Government and other prizes were awarded as follows :—

(1) Best second year student (gold medal)—T. P. Palanikumaran.

(2) The Campbell Walker Prize for the best all round ranger.—K. R. Murjani.

(3) The Brasier Prize for the best out-door ranger—N. M. Karumbayya.

(4) The Lodge Prize for the best second year student in forest engineering—T. P. Palanikumaran.

(5) The Madras Conservator's Prize for the best second year student in Forestry —T. P. Palanikumaran.

(6) The "Indian Forester" Prize for the best essay by past students—L. T. Taylor.

(7) The "Indian Forester" Prize for the best essay by present students—B. S. F. Lebbai.

(8) The Pentland Shield for the best athlete in the College—S. Ramalingam

(9) The Fischer Cup for the best Gymnast in the College—S. Ramalingam.

Messrs. A. Wimbush, T. A. Whitehead, F. A. Seager, E. M. Crothers, S. V Devadasan, Capt. H. Irwin, M.C., and Capt. M. G. Platts, M.C., O.B.E., were the examiners at the final examinations in June 1921.

The examiners' reports were on the whole good.

Mr. J. Morrit of the Police department examined the students in gymnastics.

As pointed out in previous administration reports the want of text-books in range administration and engineering is a heavy handicap to the instructors in these subjects.

Practical training in the Demonstration Forest and in the Engineering Park continued throughout the year to form an important part of the College curriculum

The Prizes and Certificates were very kindly given away by Lady Davidson on speech day, June 30th, on which occasion the Hon'ble Sir Lionel Davidson, K.C.S.I., I.C.S., presided. Amongst the officers who were present at the function the College was glad to welcome Mr. P. H. Clutterbuck, O.I.E., the Inspector-General of Forests to the Government of India.

After the prize distribution, a garden party was held in the College grounds to which a large number of guests were invited by the Board of Visitors and staff of the College.

The students of the 1920–22 division were examined in First Aid at the end of March 1922, Major John Forrest and his Assistant, Doctor Peters, conducted the examination. Out of 35 students who sat for the examination 21 gained the Saint John's Ambulance Certificates for proficiency.

The periodical and half-yearly examinations held as usual show that satisfactory progress is being made by both divisions.

CHAPTER III.

Administration, Touring, Health and Conduct.

Administration.—The Board of Visitors met at the College on the 28th June 1921 and the following important matters were discussed:—

(1) The erection of a new pump and engine-house over the municipal well acquired.

(2) The revision of the College calendar.

(3) The construction of semi-permanent quarters to replace tents in students' camps.

(4) The Madras Forest College Magazine.

(5) The Curator to serve as Demonstrator.

(6) The Demonstration Forest and the revision of its working plan.

The resolutions passed have since been given effect to in the majority of cases; but we are still without our very necessary auxiliary engine and pump over the "municipal" well recently acquired.

Cost of education.—The cost of education per student has not altered appreciably during the year. It is hoped, however, that shortly a fall will be apparent owing to various economies that are being introduced, the chief among which is the substitution of sheds for tents when the College is in camp.

Touring.—The camping during the year under review has been in accordance with the sanctioned programme except that owing to the Mappilla rising in Malabar, which made it unsafe, the senior division camped at Topslip and Sethumadai during November and December instead of at Nilambur and Nedungayam.

The programme of tours followed by the students and the works carried out by them are given below:—

Senior Division.

April and May, Arambyshola (Ootacamund).—The students of the 1919–21 division were employed in the study of the evergreen forests, measurement and valuation of sample plots, and formation of "model forests" in the Frenella undergrowth to give practical instruction in the various systems of treatment. Lectures on sylviculture, working plans and botany were delivered. A temporary nursery was formed. The final survey examination was held.

September and October (Komattiyeri).—The students of the 1920–22 division entered their second year in August 1921, and became the senior division. They were employed in the study of the sylviculture of sandal, in checking reserve boundaries, in road alignment, construction of culverts and botany excursions.

November and December—Sethumadai and Topslip (South Coimbatore division).—The students were engaged in the study of fuel coupes under working, concentrated regeneration of teak plots, and the natural growth of teak; in the construction of a suspension bridge; in laying tram lines, and road construction; and in botany excursions.

January and February 1922 (*Dhoni camp*).—The students were engaged in the measurement of sample trees, enumeration work, the preparation of stock maps, drawing up their annual reconnaisance reports; and in the alignment of a timber slide which has subsequently been constructed.

Junior Division.

April and May 1921—*Bandyshola* (*Coonoor*).—The students of the 1920–22 division were engaged in sylviculture and botany excursions, the construction of bridges, checking the boundaries of reserves, laying out sample plots and designing camp quarters.

September and October 1921 (*Sadivayal*).—In August, the new 1921–23 students arrived and constituted the new Junior Division. They were engaged in the survey of fuel coupes, inspection of shola forests, checking reserve boundaries, construction of temporary bridges and in botany excursions.

November and December 1921—*Sethumadai and Topslip* (*South Coimbatore division*).—Time was occupied in the study of teak regeneration areas and plantations, visits to the shola forests, the inspection of elephant pits, construction of a charcoal kiln, study of fuel coupes, laying of a tramway, study of the method of tramming timber, construction of a suspension bridge and in botany excursions.

January and February 1922 (*Kargudi*).—Marking for improvement fellings, fire-line cutting, construction of kilns, inspection of elephant kraals, inspection of bridges and botanical excursions occupied the students' time.

As usual all operations on tour have been recorded in the College journals, extracts or special notes relating to works of direct value to the District being communicated to the District Forest officers concerned through the Conservators.

The thanks of the College are due to the District Forest officers of the districts visited and to such of their subordinates as have taken trouble to make the College touring comfortable and instructive, and for their co-operation and assistance.

Messrs. H. F. A. Wood and H. Tireman, the Conservators of the Fifth and Sixth Circles, respectively visited the College camps at Sethumadai and Dhoni.

While at Kargudi the students of the 1921–23 Division were tested in swimming. Twenty out of the 29 students passed the test.

Health.—The general health of the students while at headquarters, was, on the whole, satisfactory. In camp the health of the students was better than usual. The students of the 1921–23 Division were especially free from sickness and this was largely attributed to a wonderful quinine tonic with which the officer commanding dosed them regularly.

Just at the close of the year there was an outbreak of smallpox on the estate. By prompt action and careful segregation of those affected and largely owing to the efforts of Mr. W. C. Hart, the house tutor, the disease was prevented from spreading.

A most painful episode of the year under review was the death of Mr. M. R. Sundaram Ayyar, an Instructor attached to the Senior Division of the College, on the 29th March 1922. He was a willing and efficient worker, was keen on his job, was popular with the students and was always courteous and tactful and a pleasant man to work with. By his death the College has lost an efficient Instructor and the Department an able officer.

Conduct and Discipline.—The discipline at the College was, during the year, satisfactory and the general tone good. One student of the Junior Division had to be withdrawn for misdemeanour.

At the beginning of the College year we had an unruly element to deal with amongst a certain clique, largely confined to the newly arrived Juniors, and it was dealt with quite satisfactorily.

Apart from this the conduct of both years has been good. On the whole the students have shown themselves to be self-respecting, courteous and manly young men.

CHAPTER IV.

THE GASS FOREST MUSEUM; COLLEGE AND STUDENTS' LIBRARIES.

Mr. G. Viswanatha Ayyar, B.A., the Curator, was in charge of the Museum throughout the year.

Several contributions were made during the year to the Museum by Forest officers and others and the gratitude of the college is due to the donors. Among the more important contributions were:—

(*a*) About 25 timber panels (22 of which were presented by the Forest Research Officer, M.R.Ry. Rao Sahib K. R. Venkataramana Ayyar Avargal).

(*b*) Two hundred botanical specimens presented by C. E. C. Fischer, Esq.

(*c*) About 25 seedlings and 150 botanical specimens presented by the Forest Research Officer.

(*d*) A French hunting horn presented by F. L. C. Cowley Brown, Esq.

(*e*) Four tool handles from the Barielly Wood-working Institute.

(*f*) Thirty-five timber samples from the Imperial Forest Economist, Dehra Dun.

That the Museum is becoming more popular is evident from the fact that the number of visitors during the year rose to 21,905 from 21,173 of the previous year.

Prominent among those that paid a visit during the year, were:—

Sir Lionel Davidson, K.C.S.I., I.C.S.,
P. H. Clutterbuck, Esq., C.I.E., C.B.E., V.D.,
H. G. Stokes, Esq., C.I.E., I.C.S.,
C. W. E. Cotton, Esq., C.I.E., I.C.S.,
W. H. Robertson, Esq., I.F.S., and
Dr. Alfred Hay of the Indian Institute of Science, Bangalore.

We continue to receive specimens for identification, chiefly timber samples, and do our best to furnish the necessary information.

General Library.—One hundred and eighty books were added to the Library.

Students' Library.—Ten books were presented to the library by Mr. N. R. Subrahmania Pillai, a clerk of this office and our thanks are due to him for his kind gift.

CHAPTER V.

SUPERVISION, WATER-SUPPLY, ROADS AND BUILDINGS, ETC.

Supervision.—The post of the Estate Overseer was held by Mr. A. Marudachallam Pillai throughout the year. He is an untrained man, and though he at first tried hard to pick up the work, it seems unlikely that he can prove a permanent success. Unless the pay of this responsible post is raised, however, it will not be possible to get a suitable man. This question is now before Government.

Water-supply.—The project of connecting the Municipal Well with the College well was completed by the Public Works Department during the year and we have now a water supply that is just enough for our present needs. We are, however, as already pointed out above, still without the essential auxiliary engine; it is hoped that it will be installed shortly by the Public Works Department.

One of the two rain-water tanks constructed by the Public Works Department on the College estate is found to be defective and endeavours have been made by them to rectify it.

Roads.—The scheme for the re-lay of roads on the estate was sanctioned during the year. The roads on the north side of the main building were relaid.

All the existing roads were kept in repair.

Buildings.—Necessary repairs to the hostels and other buildings under the control of the Principal were executed during the year. In accordance with the resolution of the Board of Visitors in June 1921, semi-permanent sheds to replace

tents in the College camps were constructed at Topslip (Mount Stuart) and at Kargudi during the year. Estimates for the construction of wooden huts at Arambyshola were sanctioned rather late in the year and the work is almost completed.

Students' club.—The Students' Club has now become the centre of social life in the College and attracts the students in large numbers.

Athletic ground.—Rupees 1,580 was sanctioned by the Chief Conservator for repairing a third of the College Athletic ground and the work was carried out at a cost of Rs. 1,437-5-11.

Establishment.—The office was inspected in July 1921 and the general results of inspection were not satisfactory. The work improved for a little but then went off again. The Manager continually complained of ill-health and neglected his work, and the rest of the office, as would be expected, followed suit.

Immediately after the close of the year under review a sudden unexpected inspection by the Principal disclosed many grave irregularities and defalcations, and the Manager of the office disappeared and has not yet been apprehended.

None of the clerical staff worked really well during the year, but this is only to be expected when the Manager of the office is not trustworthy. It is hoped that great improvement will be shown in the current year.

The Storekeeper in especial has been bad. He has been changed four times in the past 12 months, and the present incumbent is useless. There have undoubtedly been losses in the stores which are now being checked. Unless the pay of this post is raised it will be quite impossible to get any one capable of undertaking the work entailed, which is difficult, responsible and monotonous. The question of increasing the pay of this appointment is also before Government.

Deputation of staff.—Mr. W. C. Hart, the Engineering Instructor was deputed in July 1921 to the Sappers' and Miners' School of Field Engineering at Bangalore to undergo a short course of training.

The Principal was deputed in January 1922 to attend the Forest Utilization Conference held at Dehra Dun and also to visit the Central Utilization Institute at Bareilly. He submitted, to the Chief Conservator of Forests a separate report on his work shortly after his return.

CHAPTER VI.

General.

Stock-taking.—The stock of the College was checked in detail in July 1921 by the staff of the College and several irregularities were brought to light.

Athletics.—The annual athletic sports of the College were held on the 7th September in the College Athletic Grounds and proved a great success. The "Victor Ludorum" was M. B. Ayanna who won the Challenge cup presented by Mr. R. D. Richmond for the athlete obtaining the greatest number of marks for various events in the sports.

Hockey is our recognized game, and at this six matches were played and five won. In the local tournament we reached the finals but were beaten by the Agricultural College after a good game.

The inter-divisional hockey match for the Cowley-Brown Challenge Cup was won by the 1920-22 division.

The Marathon race was won in November by M. B. Ayanna. It was over seven miles in length and he ran it in the very good time of 48 minutes.

The Inter Divisional Challenge Cup presented by the late Risaldar Major Amir Muhammad Khan Sahib for this race was won by the Senior Division. During the year M.R.Ry. K. Rama Raja Mannarghat Moopil Nair Avargal very generously

founded a fund to provide a personal prize for the winner of the Marathon race, it being one in which all students in the College have to compete and an athletic event of some importance. For his generosity the thanks of the whole College are due. He has no direct connexion with the College and his action can have had no other aim but to foster a sporting spirit among the young Rangers.

The Pentland Shield for the best all-round athlete in the College awarded in June 1921 was won by S. Ramalingam with 25·5 marks. C. S. Ganapathi was second with 23·1 marks and K. A. Bhandari third with 22·5 marks.

All the staff have taken part, to the best of their ability, in the College Athletics and this has done a lot to encourage the students to make themselves proficient and to stimulate their keenness.

Mr. Cornwell was the Vice-President of the Athletic Club up to 15th July 1921 and Mr. G. C. Robinson from 6th August 1921 to the end of the year; under their supervision the Athletics have been managed with efficiency.

MADRAS FOREST COLLEGE, COIMBATORE,
27th July 1922.

C. C. WILSON,
Principal.

APPENDIX I.

Statement of revenue and expenditure for the forest year 1921–22.

Head of account.		Amount.		
Receipts—		RS.	A.	P.
I (*b*)		199	13	5
II (*d*)		121	4	9
V (*b*)		38,978	4	8
	Total ...	39,299	6	10
Expenditure—				
	A. Conservancy and works.			
A. VI. c.		6,345	5	3
A. VII. a.		2,578	5	6
A. VII. b.		12,015	6	8
A. VII. c.		2,080	4	2
A. VIII. e.		2,930	12	1
A. VIII. g.		2,158	11	0
A. IX. c.		2,380	4	9
	Total A ...	30,489	1	5
	B. Establishment.			
B. i. b.		33,460	13	3
B. i. c.		35	7	9
B. i. d.		12,955	2	8
B. i. e.		21,665	1	5
B. i. f.		6,908	7	5
B. i. g.		6,147	15	3
B. ii. b.		10,898	10	5
B. ii. c.		8,184	1	8
B. ii. d.		2,163	9	11
B. iii. b. 2		14,847	14	9
	Total B ...	1,17,267	4	6
	Total A and B ...	1,47,756	5	11

APPENDIX II.

Abstract showing the live-stock, stores, tools, etc., of the Madras Forest College, Coimbatore, for the year ending 31st March 1922.

Description of stock.	On hand at the commencement of the year.		On hand at the end of the year.		Difference in value in favour of the year.	Difference in value against the year.
	Number.	Amount.	Number.	Amount.		
Madras Forest College, Coimbatore district.		RS. A. P.		RS. A. P.	RS. A. P.	RS. A. P.
Survey and other instruments.	2,100	7,561 10 3	2,204	7,346 9 4	..	215 0 11
Tools	768	1,351 15 8	776	1,310 7 0	..	41 8 8
Furniture	1,637	23,230 14 1	1,617	23,187 8 8	..	43 5 5
Tents	139	18,811 1 6	79	13,508 3 0	..	5,302 14 6
Uniform and accoutrements ..	92	408 3 7	92	400 11 1	..	7 8 6
Scientific apparatus	1,538	696 11 5	1,505	578 9 6	..	118 1 11
Photographic apparatus ..	12	381 4 5	20	385 13 3	4 8 10	..
Gymnasium	9	367 14 7	9	364 3 0	..	3 11 7
Machinery (oil engine, etc.).	2	2,439 4 10	2	2,396 12 11	..	42 7 11
Miscellaneous	1,555	3,668 4 2	1,571	3,702 4 2	34 0 0	..
Total ..	7,847	58,917 4 6	7,875	53,181 1 11	38 8 10	5,774 11 5

APPENDIX III.

List of Students, Madras Forest College, Coimbatore, 1921–23 division.

Serial number and name of student.	Circle or State to which attached.
1. V. Sundaresan	First Circle.
2. A. Suryarao Nayudu	Do.
3. N. Ayyanna	Second Circle.
4. P. K. Kuttappan Pillai	Third Circle.
5. S. Sankaran	Do.
6 T. Venkatasubbayya	Do.
7. J. S. Vedanyakam	Fourth Circle.
8. I. Z. Robert Paul	Do.
9. C. Thiruvengadam Pillai	Fifth Circle.
10. P. A. Venkataraman	Do.
11. P. Madhavan Nayar	Sixth Circle.
12. K. Shankaranarayana Rao	Do.
13. K. S. Timmayya	Coorg.
14. A. R. Samarawickrama	Ceylon.
15. W. D. C. Perera	Do.
16. P. T. Jayakodi	Do.
17. A. A. Arunachalam	Do.
18. S. Abeyawickrama	Do.
19. Biram Singh	Central Provinces.
20. Gurucharan Singh	Do.
21. Saiyid Hadi Husain	Do.
22. Pirithi Chand	Do.
23. Anil Kumer Basu	Bihar and Orissa.
24. Chakradhar Behera	Do.
25. Patras Kandir	Do.
26. Amos Demta	Do.
27. Brishavo Bar Panda	Do.
28. Muhammad Rahamatulla Khan	Hyderabad.
29. Do. Wazir Khan	Do.
30. Do. Taiyab Khan Nizami	Rewa.
31. Mumtaz Husain	Do.
32. Brajo Kishore Joshi	Patna.
33. K. Appukuttan Vellodi	Court of Wards.
34. Dorairaja Pillai	Private student.

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APPENDIX.

APPENDIX A.—Comparative statement of number and origin of fires that occurred during the calendar year 1921.

District.	A. Fires caused by accident or through carelessness in burning fire lines.		B. Fires entering forests by crossing exterior fire lines.		C. Fires beginning inside the reserves or fire-traced areas.														Causes unknown.		Total of A, B and C and causes unknown.	
					Owing to carelessness or accident.								By intentional firing.									
					By workmen engaged in the forests or by purchasers of forest produce and by hay cutters.		By villagers, travellers, etc., passing through the forests.		By railway engines.		By lightning or by fire balloons.		In order to obtain new grass.		In order to turn out game or to reduce cover.		Maliciously fired.		Total.					
(1)	Number of fires. (2)	Area burnt in acres. (3)	Number of fires. (4)	Area burnt in acres. (5)	Number of fires. (6)	Area burnt in acres. (7)	Number of fires. (8)	Area burnt in acres. (9)	Number of fires. (10)	Area burnt in acres. (11)	Number of fires. (12)	Area burnt in acres. (13)	Number of fires. (14)	Area burnt in acres. (15)	Number of fires. (16)	Area burnt in acres. (17)	Number of fires. (18)	Area burnt in acres. (19)	Number of fires. (20)	Area burnt in acres. (21)	Number of fires. (22)	Area burnt in acres. (23)	Number of fires. (24)	Area burnt in acres. (25)
First Circle.																								
Ganjam	1	25	27	14,51	1	1,200	34	16,665	..	..	..	..	13	3,118	37	69,629	5	1,240	90	91,852	27	6,088	145	(*a*) 112,536
Vizagapatam ..	1	3	2	7	4	348	21	2,345	..	..	..	..	12	846	2	30	..	..	39	3,569	2	35	44	3,634
Godavari, Upper..	1	300	26	36,269	1	450	8	15,902	..	..	..	..	..	..	14	25,898	1	150	24	42,400	16	23,988	67	102,957
Do. Lower..	..	..	..	..	..	..	54	5,497	..	..	..	..	..	..	..	..	..	..	54	5,497	..	..	54	5,497
Kistna .. .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	41	3	41
Total ..	3	328	55	50,867	6	1,998	117	40,409	..	..	..	..	25	3,964	53	95,557	6	1,390	207	143,318	48	30,152	313	224,665
Second Circle.																								
Bellary	..	..	..	..	..	..	18	4,635	..	..	..	..	..	..	..	..	..	..	18	4,635	..	..	18	4,635
Anantapur ..	1	2	2	65	..	..	1	300	..	..	2	9	8	631	..	..	..	..	11	940	..	..	14	1,007
Guntur	..	..	..	..	..	..	4	96	..	..	..	..	..	..	..	..	..	..	4	96	..	..	4	96
Kurnool, East ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	200	..	..	1	200	2	38	3	238
Do. South ..	..	..	..	..	3	5,300	1	6	..	..	..	..	4	3,101	..	..	5	2,213	13	10,620	5	2,840	18	13,460
Do. West ..	..	..	..	..	..	..	3	190	..	..	..	..	..	..	..	..	..	..	3	190	..	..	3	190
Total ..	1	2	2	65	3	5,300	27	5,227	..	..	2	9	12	3,732	1	200	5	2,213	50	16,681	7	2,878	60	19,626
Third Circle.																								
Cuddapah, North.	1	1,685	11	1,404	2	88	7	102	..	..	..	..	21	8,667	..	..	1	5	31	8,862	27	19,608	70	(*b*) 31,559
Do. South.	2	4,005	6	4,176	..	..	11	3,348	..	..	..	..	64	29,667	..	..	5	3,844	80	36,859	4	4,291	92	(*b*) 49,331
Do. West.	1	20	4	519	3	130	..	..	..	..	..	..	20	4,246	2	125	60	12,452	85	17,953	14	2,099	104	20,591
Nellore	..	..	.	..	..	..	1	100	..	..	..	..	5	1,430	..	..	2	350	8	1,880	7	592	15	(*b*) 2,472
Chingleput ..	..	..	..	..	..	..	..	..	..	..	2	42	..	..	..	..	..	..	2	42	..	..	2	42
Chittoor	1	15	5	301	6	244	14	455	..	..	..	..	65	22,080	..	..	..	..	85	22,779	13	1,970	104	25,065
Vellore, North ..	14	316	..	..	..	..	5	1,805	2	1	..	..	..	..	..	..	18	909	25	2,715	28	2,057	67	5,088
Total ..	19	6,041	26	6,400	11	462	38	5,810	2	1	2	42	175	66,090	2	125	86	18,560	316	91,090	93	30,617	454	134,148

(*a*) Includes areas burnt in unprotected tracts.

(*b*) Do. do. forest tracts—

	Acs.
North Cuddapah	355
South Cuddapah	3,683
Nellore	4
Total ..	4,042

Appendix A.—Comparative statement of number and origin of fires that occurred during the calendar year 1921—*cont.*

District.	A. Fires caused by accident or through carelessness in burning fire lines.		B. Fires entering forests by crossing exterior fire lines.		C. Fires beginning inside the reserves or fire-traced areas.														Causes unknown.		Total of A, B and C and causes unknown.	
					Owing to carelessness or accident.								By intentional firing.									
					By workmen engaged in the forests or by purchasers of forest produce and by hay cutters.		By villagers, travellers, etc., passing through the forests.		By railway engines.		By lightning or by fire balloons.		In order to obtain new grass.		In order to turn out game or to reduce cover.		Maliciously fired.		Total.					
	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Fourth Circle.																						
Vellore, South ..	..	..	1	48	1	14	2	6	..	..	..	..	12	741	..	..	22	696	37	1,457	1	10	39	1,515
Do. West ..	..	..	..	..	1	50	3	81	..	..	..	..	6	280	5	424	2	114	17	949	11	389	28	1,338
Salem, East ..	..	..	2	3	..	..	3	1	..	..	..	..	5	95	..	..	2	290	10	386	14	577	26	966
Do. North ..	5	2,362	..	..	..	..	9	590	..	..	..	..	14	3,465	9	3,050	..	..	32	7,105	20	9,623	57	19,090
Do. Central ..	..	..	..	..	3	62	4	95	..	..	..	..	16	369	..	..	4	208	27	734	20	625	47	1,359
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	26	672	26	672
Total ..	5	2,362	3	51	5	126	21	773	..	..	..	..	53	4,950	14	3,474	30	1,308	123	10,631	92	11,896	223	24,940
Fifth Circle.																						
Kollegal ..	2	80	..	..	3	460	3	120	..	..	..	..	9	2,314	1	400	2	98	18	3,392	6	882	26	4,354
Coimbatore, North.	4	135	4	1,103	2	225	4	217	..	..	..	..	..	..	..	..	..	..	6	442	37	12,100	51	13,780
Do. South.	..	..	4	610	5	292	2	1,060	..	..	..	..	1	5	..	..	..	..	8	1,357	4	490	16	2,457
Madura	6	1,806	35	4,230	1	7	4	207	..	..	..	..	41	6,262	1	20	20	856	67	7,352	60	2,895	168	16,283
Tinnevelly ..	2	61	6	1,226	7	1,298	4	53	..	..	5	1,337	4	1,020	15	5,711	2	102	37	9,521	9	643	54	11,451
Total ..	14	2,082	49	7,169	18	2,282	17	1,657	..	..	5	1,337	55	9,601	17	6,131	24	1,056	136	22,064	116	17,010	315	48,325
Sixth Circle.																						
Mangalore, North.	4	280	19	136	1	15	13	197	..	..	..	..	..	..	18	593	..	..	32	805	4	9	59	1,230
Do. South.	1	1	20	211	4	32	10	172	..	..	..	..	8	211	4	216	5	488	31	1,119	18	679	70	2,010
Wynaad	1	15	3	205	..	..	1	25	..	..	..	..	1	100	..	..	..	..	2	125	..	..	6	345
Nilambur ..	..	..	1	170	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	170
The Nilgiris ..	4	593	3	745	1	6	10	287	2	5	..	..	13	2,840	3	800	2	5	37	3,943	8	2,752	52	8,033
Palghat	2	45	4	43	..	..	2	101	..	..	..	..	..	..	..	..	3	1,416	5	1,517	3	18	14	1,623
Total ..	12	934	50	1,510	6	53	36	782	2	5	..	..	28	3,151	25	1,609	10	1,909	107	7,509	33	3,458	202	13,411
Grand total for 1921-22.	54	11,749	185	66,062	49	10,221	256	54,658	4	6	9	1,388	348	91,488	112	107,096	161	26,436	939	291,293	389	96,011	1,567	465,115
Grand total for 1920-21.	51	7,210	183	143,112	38	8,933	178	18,459	22	3,443	4	52	226	59,595	89	96,752	100	14,106	657	201,340	470	126,304	1,351	477,966

APPENDIX B.—Comparative statement of impounded cattle during 1921–22.

District.	Number of cattle impounded.		Average for three years ending 1920–21.
	1920–21.	1921–22.	
First Circle.			
Ganjām	890	706	1,442
Vizagapatam	1,037	970	839
Gōdāvari, Upper	..	1,058	522
Do. Lower	284	942	417
Kistna	3,676	3,718	3,576
Total	5,887	7,394	6,796
Second Circle.			
Bellary	5,498	7,462	6,824
Anantapur	5,954	12,792	8,784
Guntūr	17,788	13,136	20,464
Kurnool, East	5,415	3,904	5,736
Do. South	10,888	5,748	6,013
Do. West	6,933	11,201	7,342
Total	52,476	54,243	55,163
Third Circle.			
Cuddapah, North	1,570	2,752	2,130
Do. South	1,635	1,033	1,585
Do. West	6,953	6,064	7,155
Nellore	7,855	10,177	9,598
Chingleput	3,540	2,357	3,597
Chittoor	9,909	7,401	10,483
Vellore, North	6,993	7,021	5,937
Total	38,455	36,805	40,485
Fourth Circle.			
Vellore, South	6,443	6,841	6,912
Do. West	2,563	3,123	3,097
Salem, East	4,996	8,800	4,893
Do. North	433	867	878
Do. Central	2,715	2,616	2,712
Do. South	3,892	2,895	6,707
Total	21,042	25,142	25,199
Fifth Circle.			
Kollegal	2,438	4,539	3,069
Coimbatore, North	2,556	3,947	3,604
Do. South	300	732	442
Madura	3,811	4,876	4,707
Tinnevelly	1,717	3,037	2,323
Total	10,822	17,131	14,145
Sixth Circle.			
Mangalore, North	342	330	363
Do. South	587	281	485
Wynaad	15	86	55
Nilambur	..	..	243
The Nilgiris	330	1,009	354
Palghat	(a) 915	(a) 465	(a) (b) 1,283
Total	2,189	2,171	2,783
Grand total, Presidency	130,871	142,886	144,571

(a) Excludes Mettupalayam range.
(b) The average is only for two years 1919–20 and 1920–21.

Annual Form No. 65.

Forest Department, Madras Presidency.

Area of reserved forests and reserved lands during 1921–22

Districts.	Area of reserved forests.						Area of reserved lands.						Total area of reserved forests and reserved lands in square miles.
	Area on 1st April 1921.		Added during the year.	Excluded during the year.	Area on 31st March 1922.		Area on 1st April 1921.		Added during the year.	Excluded during the year.	Area on 31st March 1922.		
	Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.	Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
First Circle.													
Ganjam	400,235	626	..	(a) 238	399,997	625	67	..	45	..	112	..	625
Vizagapatam	196,991	308	..	(e) 34	196,957	308	(c) 1,313 (d) 14	2	..	..	(c) 1,313 (d) 14	2	310
Godavari, Upper	374,435	585	..	..	374,435	585	157,833	247	..	..	1,57,833	247	832
Do. Lower	255,409	399	48,122	..	303,531	474	56,088	87	..	(b) 48,122	7,966	12	486
Kistna	169,196	264	..	..	169,196	264	(d) 381	1	..	..	(d) 381	1	265
Total ..	1,396,266	2,182	48,122	272	1,444,116	2,256	215,696	337	45	48,122	167,619	262	2,518
Second Circle.													
Bellary	365,766	572	46	(a) 2,658	363,154	567	1,899	3	..	(b) 46	1,853	3	570
Anantapur	477,770	747	..	(g) 17	477,753	747	..	..	..	..	..	..	747
Guntur	511,567	799	3	(a) 6,631	504,939	789	3	..	38	(b) 3	38	..	789
Kurnool, East	620,784	970	..	..	620,784	970	..	..	..	..	..	..	970
Do. South	486,664	760	..	(a) 257	486,407	760	..	..	..	..	..	..	760
Do. West	547,367	855	..	(a) 37	547,330	855	..	..	..	..	..	..	855
Total ..	3,009,918	4,703	49	9,600	3,000,367	4,688	1,902	3	38	49	1,891	3	4,691
Third Circle.													
Cuddapah, North	381,229	596	263	..	381,492	596	324	1	(k) 13	(l) 263 4	70	..	596
Do. South	295,554	462	..	..	295,554	462	60	..	..	..	60	..	462
Do. West	480,778	751	508 (i) 15	(a) 83	481,218	752	508	1	..	508	..	..	752
Nellore	459,461	718	..	(a) 52 (i) 2	459,407	718	6,785	11	..	(m) 10	6,775	11	729
Chingleput	130,076	203	..	(a) 149	129,927	203	..	..	..	..	..	..	203
Chittoor	528,313	825	15	(a) 441	527,887	824	15	..	40	15	40	..	824
Vellore, North	293,287	458	..	(a) 3,398 (i) 1	289,888	453	..	..	70	..	70	..	453
Total ..	2,568,698	4,013	801	4,126	2,565,373	4,008	7,692	13	123	800	7,015	11	4,019

(a) Disafforested.
(b) Transferred to reserved forests.
(c) Leased forests.
(d) Notified under section 26 of the Forest Act.
(e) Rectification of area.
(g) Reduction due to revision of boundary.
(i) Correction of errors.
(k) Error in previous year's opening balance corrected.
(l) Shortage due to measurement as per settlement.
(m) Given up as the cost of acquisition was prohibitive.

Area of reserved forests and reserved lands during 1921-22—*cont.*

Districts.	Area of reserved forests.						Area of reserved lands.						Total area of reserved forests and reserved lands in square miles.
	Area on 1st April 1921.		Added during the year.	Excluded during the year.	Area on 31st March 1922.		Area on 1st April 1921.		Added during the year.	Excluded during the year.	Area on 31st March 1922.		
	Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.	Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Fourth Circle.													
Vellore, South	308,172	481	(*b*) 354	(*a*) 50	308,476	482	358	1	(*c*) 65	(*d*) 354	69	..	482
Do. West	244,858	383	..	..	244,858	383	42	..	..	..	42	..	383
Salem, East	367,778	575	..	(*a*) 9,209	358,569	560	7,485	12	..	..	7,485	12	572
Do. North	333,775	521	..	..	333,775	521	18	..	..	..	18	..	521
Do. Central	263,724	412	..	..	263,724	412	7,884	12	..	..	7,884	12	424
Do. South	(*e*) 216,897	339	(*b*) 4,480	(*a*) 1,394	219,983	344	12,081	19	(*c*) 13,221	(*d*) 4,480	20,822	33	377
Total ..	1,735,204	2,711	4,834	10,653	1,729,385	2,702	27,868	44	13,286	4,834	36,320	57	2,759
Fifth Circle.													
Kollegal	467,703	731	(*f*) 132,509	..	600,212	938	..	..	..	..	..	..	938
Coimbatore, North ..	586,670 (*i*) +795	917	(*h*) 112,492	(*f*) 132,509	567,448	886	..	..	..	..	..	..	886
Do. South ..	290,388	454	..	..	290,388	454	..	..	..	..	..	..	454
Madura	422,349	660	..	..	422,349	660	..	..	..	..	..	..	660
Tinnevelly	271,874	425	10	(*a*) 12	271,872	425	1,302	2	..	(*d*) 10	1,292	2	427
Total ..	2,039,779	3,187	245,011	132,521	2,152,269	3,363	1,302	2	..	10	1,292	2	3,365
Sixth Circle.													
Mangalore, North	229,976	360	..	(*i*) ..	229,976	360	..	..	..	..	..	..	360
Do. South	280,891	439	..	..	280,891	439	..	..	..	..	..	..	439
Wynaad	168,424	263	..	..	168,424	263	22	..	..	..	22	..	263
Nilambur	92,231	144	(*f*) 78	(*k*) 23,334	68,975	108	12,854	20	..	..	12,854	20	128
The Nilgiris	263,818	412	..	(*a*) 10	263,808	412	49,727 (*m*) 2,851	78 4	3,000 17	130	52,597 2,868	82 4	498
Palghat	263,784	412	23,334	(*a*) 5,775 (*l*) 112,409	168,934	264	..	..	..	..	..	..	264
Total ..	1,299,124	2,030	23,412	141,528	1,181,008	1,846	65,454	102	3,017	130	68,341	106	1,952
Grand total, Presidency ..	12,048,989	18,826	322,229	298,700	12,072,518	18,863	319,914	501	16,510	53,945	282,479	441	19,304

(*a*) Disafforested.
(*b*) Notified under section 16.
(*c*) Do. 4.
(*d*) Transferred to reserved forests.
(*e*) Correct figure.
(*f*) Area of Burgur range transferred from North Coimbatore to Kollegal.
(*h*) Area of Mettupalayam range transferred from Central Coimbatore.
(*i*) The correct area of reserves in Burgur range is reported to be 132,509 and not 131,714 acres.
(*j*) As per correct calculation.
(*k*) Transferred to Palghat.
(*l*) Transferred to North Coimbatore.
(*m*) Toda patta lands.

Appendix to Form No. 65.

Details of classification of forests in the several districts for 1921–22.

District.	Area of reserved forests.	Details of classification in square miles.						
		I	II	I and II.	III	IV	V	VI
First Circle.								
Ganjam	625	388	230	..	(a) ..	7	..	..
Vizagapatam	308	211	72	..	(a) ..	7	18	..
Godāvari, Upper	585	217	368	..	..	..	..	..
Do. Lower	474	84	(b) 256	..	..	(b) 134	(b) ..	..
Kistna	264	22	86	..	(a) ..	3	153	..
Total ..	2,256	922	1,012	..	(a) ..	151	171	..
Second Circle.								
Bellary	567	36	256	..	13	128	134	..
Anantapur	747	..	306	..	..	388	53	..
Guntūr	789	..	..	..	5	690	94	0·32
Kurnool, East	970	178	186	249	..	231	126	..
Do. South	760	282	287	..	..	190	2	..
Do. West	855	486	298	..	..	64	6	..
Total ..	4,688	982	1,333	249	18	1,691	415	0·32
Third Circle.								
Cuddapah, North	596	568	..	..	3	25	..	..
Do. South	462	431	2	..	..	29	..	..
Do. West	752	270	226	..	1	212	43	..
Nellore	718	172	164	..	4	326	52	..
Chingleput	203	..	40	..	..	146	17	..
Chittoor	824	266	331	..	1	17	209	..
Vellore, North	453	67	319	..	4	7	55	1
Total ..	4,008	1,774	1,082	..	13	762	376	1
Fourth Circle.								
Vellore, South	482	31	(a) 392	..	..	4	(a) and (e) 53	2
Do. West	383	23	342	..	..	..	7	11
Salem, East	560	316	(e) 133	..	..	50	61	..
Do. North	521	..	419	..	..	102	..	..
Do. Central	412	86	214	..	1	90	(e) 21	..
Do. South	344	(d) 210	55	..	..	..	74	(e) 5
Total ..	2,702	666	1,555	..	1	246	216	18
Fifth Circle.								
Kollegal	* 938	748	143	..	..	43	4	..
Coimbatore, North	* 886	669	171	..	..	46	..	..
Do. South	454	(a) 375	62	..	..	12	5	..
Madura	660	247	(b) 398	..	..	..	(b) 15	..
Tinnevelly	425	196	197	..	..	14	(c) 9	(c) 9
Total ..	3,363	2,235	971	..	..	115	33	9
Sixth Circle.								
Mangalore, North	360	276	35	..	1	48	..	..
Do. South	439	254	67	..	..	118	..	..
Wynaad	263	226	37	..	..	..	..	..
Nilambur	108	100	8	..	..	..	..	..
The Nilgiris	(a) 412	337	57	..	4	12	..	..
Palghat	(b) 264	141	82	..	..	24	7	..
Total ..	1,846	1,334	286	..	5	202	7	..
Grand Total, Presidency ..	18,863	7,913	6,239	249	37	3,167	1,218	28

Note for First Circle.
(a) Less than half a square mile.
(b) The figures furnished last year have been corrected. 100 square miles, consisting of Coringa and extension and Kandikuppa, have been shown under II although they are classed under "II and IV."

Note for Fourth Circle.
(a) Three square miles of class V was wrongly added to class II last year.
(c) Two square miles disafforested during the year.
(d) Seven square miles of reserved lands notified under section 16 adjoining class I reserves added to class I.
(e) In rounding off.

Note for Fifth Circle.
* Revised figures owing to transfer of Burgur range from North Coimbatore to Kollegal and Mettupalayam range from Central to North Coimbatore.
(a) Includes 27 square miles of leased forests (Pekkadi forests).
(b) Revised figures due to the transfer of about one square mile from class II to V.
(c) Do. do. three square miles from class VI to V.

Note for Sixth Circle.
(a) Two square miles of forests in scattered bits not classified.
(b) Three reserves with an area of 10 square miles have not yet been classified.

ANNUAL FORM No. 66.

Forest Department, Madras Presidency.

Progress made in forest settlements during the year 1921–22.

Forest district.	Name of forest.	Area in square miles.			Cost during the year.		Entire cost per square mile of areas finally settled.	Government notification of settlement.	
		Finally settled during the year.	In hand at commencement of the year.	Taken in hand during the year.	In forest accounts.	In other accounts.		Number.	Date.
	First Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	RS.				
Ganjam ..	Chendragiri extension (Kutinikuppa bit 1/2).	..	0·105	..	..	..	..	..	..
	Addition to Dowgam Reserve.	..	..	0·071	1,040	..	..	..	..
Godavari, Upper.	Nugur	..	246·610	..	..	..	..	..	..
Godavari, Lower.	Coringa extension	75·192	..	..	..	..	..	36	5th Feb. 1921.
	Birampalli	..	2·804	..	..	..	..	..	..
	Vemulakonda	..	5·244	..	..	..	..	..	..
	Palam	..	2·083	..	..	..	..	..	..
	Nurupudi	..	2·315	..	..	..	..	..	..
	Total ..	75·192	259·161	0·071	1,040	..	..	..	..
	Second Circle.								
Bellary ..	Daroji Foreshore	..	2·89	..	..	..	..	..	..
	Addition of enclosures in Jangikalgutta, Jittinakatta and Sogi R.F.	·072	0·072	..	..	..	..	G.O. 113	25th Jan. 1922. (Chief Conservator's Proceedings No. 34 Mis., dated 2nd Feb. 1922.)
Guntur ..	Enclosures to Nizampatnam R.F.	0·0045	0·0045	..	..	..	..	G.O. Mis. 1972	20th Oct. 1921. (Chief Conservator's Proceedings No. 469 Mis., dated 24th Oct. 1921.)
	Muttakur extension 4 ..	..	..	0·06	..	..	..	G.O. Mis 272	21st Feb. 1922. (Chief Conservator's Proceedings No. 92 Mis., dated 28th Feb. 1922.)
	Total ..	0·0765	2·9665 or 3 square miles.	0·06	..	..	..	..	..
	Third Circle.								
Cuddapah, North.	Dasaripalli	0·16	..	..	..	..	..	99	13th May 1921.
	Kalasapad extension	0·027	..	..	..	..	..	147	4th July 1921.
	Dasarapalli extension ..	0·20	0·10	..	..	..	..	147	Do.
								99	13th May 1921.
	Lankamalai extension ..	0·02	..	..	..	..	..	99	Do.
	Lankamalai	0·002	..	..	..	..	..	251	13th Oct. 1921.
Cuddapah, South.	Kodivengammabhavi R.F. ..	..	0·547	..	..	..	..	..	..
	Seshachallam Rollamadugu R.F.	..	0·038	..	..	..	..	..	..
Cuddapah, West.	Fields of Hasanapuram village within Palakonda R.F.	0·349	..	..	..	..	..	9	12th Feb. 1921.
	Fields of Vangimalla within Palakonda extension C.	0·209	..	..	..	..	..	9	Do.
	Fields of Hasanapuram village within Palakonda extension C.	0·065	..	..	..	..	..	9	Do.
	Fields of Gopagudipalli village within Idupulapaya R.F.	0·012	..	..	..	..	..	9	Do.
	Fields of Guvalcheruvu village within Idupulapaya R.F.	0·007	..	..	..	..	..	9	Do.
	Fields of Chilakampalli village within Idupulapaya R.F.	0·006	..	..	..	..	..	9	Do.
	Fields of Chenchuvaripenta village within Idupulapaya R.F.	0·014	..	..	..	..	..	9	Do.
	Fields of Brahmana Erragudipalli within Idupulapaya R.F.	0·031	..	..	..	..	..	9	Do.
	Do. do.	0·062	..	..	..	..	..	9	Do.
	Fields in Chintarajupalli in Vontimitta extension R.F.	0·045	..	..	..	..	..	191	11th Aug. 1921.
Nellore ..	Addition to Tummalapenta, West.	..	(a) 0·015	..	736	..	..	..	..
	Rapur Veligandla A-1 extension.	..	10·586	..					

(a) Given up.

Progress made in forest settlements during the year 1921-22—*cont.*

Forest district.	Name of forest.	Area in square miles.			Cost during the year.		Entire cost per square mile of areas finally settled.	Government notification of settlement.	
		Finally settled during the year.	In hand at commencement of the year.	Taken in hand during the year.	In forest accounts.	In other accounts.		Number.	Date.
	Third Circle—cont.	SQ. MLS.	SQ. MLS.	SQ. MLS.	RS.				
Chittoor ..	Addition to Santhapet extension A.	0·005	..	..	..	..	..	66	4th April 1921.
	Palmaner reserve extension ..	0·012	..	..	250	..	..	49	7th Feb. 1922.
	Peddanaigdrug reserve extension.	0·006	..	..	44	..	..	54	Do.
	Extension to Musalmadugu extension.	..	..	0·003	..	..	..	248	11th Oct. 1921.
	Addition to Peddur extension reserve.	..	..	0·003	..	..	..	230	20th Sep. 1921.
	Extension to Melmoyi R.F. ..	..	..	0·04	..	..	..	241	4th Oct. 1921.
	Addition to Toriganda reserve.	..	..	0·02	..	..	..	283	7th Nov. 1921.
	Addition to Musalimadugu extension.	..	..	0 001	..	..	..	268	25th Oct. 1921.
Vellore, North.	Block No. 72, Arasampattu ..	..	..	0·01	..	..	..	205	17th Aug. 1921.
	Block No. 94, Karapattu ..	..	..	0·10	..	..	..	310	7th Dec. 1921.
	Total ..	1·232	11·286	0·177	1,030	..	..	..	..
	Fourth Circle.								
Vellore, South.	Malayalam	0·40	..	..	..	..	..	51	31st Mar. 1921.
	Santavasal	0·15	..	..	..	..	..	51	Do.
	Eraiyurmalai	..	0·0072	..	..	..	..	..	Chief Conservator's No. 439, dated 27th Aug. 1920.
	Kavuttimalai	0·0072	..	..	..	..	..	265	25th Oct. 1921.
	Mulakad	..	..	0·0405	..	..	..	91	14th Mar. 1922.
	Nattampalli	..	..	0·0092	..	..	..	124	6th June 1921.
	Penugolathur Swamimalai ..	..	..	0·0524	..	..	..		
Vellore, West.	Varatanapalli extension ..	..	0·07	..	..	..	..	..	..
Salem, East.	Arana and Tirthagiri	..	5·92	..	..	..	..	..	..
	Pallipatti extension	..	5·77	..	..	..	..	..	..
Salem, North.	Pennagaram extension ..	..	0·0280	..	..	..	..	..	..
Salem, Central.	Jarugumalai	..	11·94	..	..	..	..	..	..
	Kanjeri extension	..	0·38	..	..	..	..	..	..
Salem, South.	Methalamalai	0·01	0·01	..	..	..	..	8	15th Feb. 1921.
	Vedambium	4·85	4·85	..	..	..	..	47	25th Jan. 1922.
	Vanjarai	0·51	0·51	..	..	..	..	211	30th Aug. 1921.
	Periasholai	1·31	1·31	..	..	..	..	158	29th June 1921.
	Vengamudi	0 33	0·33	..	..	..	..	54	5th April 1921.
	Veppadi	..	5·38	..	..	..	..	305	28th July 1919.
	Atturmanmalai	..	6·49	..	..	..	..	76	17th Feb. 1920. No. 348, Rev. (Spl.), dated 17th Feb. 1920.
	Shemmalai additions	..	..	0·03	..	..	..	115	1st July 1921.
	Paithur	..	..	20·63	174	..	..	136	24th June 1921.
	Total ..	7·5672	42·9952	20·7621	174	..	..	..	..
	Fifth Circle.								
Tinnevelly.	Karumandiamman Shola estate.	..	0·15	..	1,309	..	..	..	..
	Mahendragiri estates	0·01	0·01	..	..	..	..	163	6th July 1921.
	Mulakadu block	..	1·48	..	..	..	..	..	..
	Hare Island for Tuticorin harbour.	..	0·22	..	..	..	..	..	..
	Punayadi Island for Tuticorin harbour.	..	0·16	..	..	..	..	..	..
	Total ..	0·01	2·02	..	1,309	..	..	..	..
	Sixth Circle.								
The Nilgiris.	Mudumalai	..	74·69	..	..	..	..	..	..
	Addition to Kalhatti	..	0·17	..	..	..	..	..	..
	Do. to Wenlock downs.	..	0·03 (a) 0·20	..	..	..	..	..	..
	Do. to Nedugula ..	..	0·06	..	..	..	..	..	..
	Do. to Nadukaduhalla.	..	0·27	..	..	..	..	..	..
	Do. to Attukkadu Shola.	..	0·05	..	..	..	..	..	..
	Do. to Doddakavu ..	..	0 08	..	..	..	..	..	..
	Do. to No. III to Kodanad Valley Shola.	..	0·13	..	..	..	..	..	..
	Addition No. II to Madanad.	..	0·16	..	..	..	..	..	..
	Do. to Sigur ..	..	..	4·69	..	..	..	..	..
	Total ..	..	75·64	4·69	..	..	..	..	..
	Grand total, Presidency ..	84	394	25	3,553	..	..	..	..

* Correct area after settlement.

(a) Excluded at settlement.

Annual Form No. 67.

Forest Department, Madras Presidency.

Record of demarcation and maintenance of boundaries during 1921–22.

District.	Length of boundaries artificially demarcated during the year.	Length of previously existing boundaries repaired.	Length of previously existing boundaries not repaired.	Total length of artificially marked boundaries at the close of the year.	Length of boundaries still to be demarcated at the close of the year.	Length of natural boundaries not requiring artificial marks.	Total length of boundaries at the close of the year.	Expenditure on demarcation during the year.	
								On new work.	On repairs.
First Circle.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	RS.	RS.
Ganjām	9	(*a*) 1,368 (*d*) 2	..	1,375	..	80	1,455	208	..
Vizagapatam ..	..	(*a*) 564	..	564	..	19	583	..	..
Gōdāvari, Upper ..	..	(*b*) 484	..	484	..	151	635	..	(*a*) 1,298
Do. Lower ..	15	(*a*) 723	..	738	..	71	809	..	(*a*) 122
Kistna	..	16 (*a*) 426	105	547	..	40	587	..	197 (*a*) 15
Total ..	24	16 (*b*) 484 (*a*) 3,079	105	3,708	..	361	4,069	208	197 (*a*) 1,435
Second Circle.									
Bellary	62	(*c*) 1,433	..	(*b*) 1,495	..	..	1,495	2,999	61
Anantapur	..	(*e*) 59 (*c*) 1,728	..	1,787	..	34	1,821	..	482
Guntūr	14		1,245	(*b*) 1,259	..	..	1,259	231	..
Kurnool, East ..	..	(*c*) 520 (*d*) 45 (*e*) 6	40	611	1	48	660	..	46
Do. South ..	..	(*e*) 5 (*c*) 599	28	632	..	5	637	..	20
Do. West	(*a*) 14 chains or $\frac{1}{6}$ mile.	(*e*) 70 (*c*) 656	190	916	..	100	1,016	..	281 (*f*) 228
Total ..	76	5,121	1,503	6,700	1	187	6,888	3,230	890 (*f*) 228
Third Circle.									
Cuddapah, North ..	..	(*a*) 188	372	560	..	13	573	..	..
Do. South ..	..	(*a*) 287	39	326	..	40	366	..	..
Do. West ..	..	(*a*) 383	1,016	1,399	..	22	1,421	5	9
Nellore	..	(*a*) 1,637	321	1,958	4	84	2,046	..	1,693
Chingleput	..	30 (*a*) 824	..	854	..	..	854	..	1,412
Chittoor	..	65 (*a*) 1,239	142	1,446	..	60	1,506	69	2,074
Vellore, North ..	..	23 (*a*) 1,046 (*b*) 21	..	1,048	..	11	1,059	..	67
Total ..	..	5,701	1,890	7,591	4	230	7,825	74	5,255

Note for First Circle.
(*a*) Cleared by subordinates free of cost.
(*b*) Cleared by hill tribes for fire protection, the cost being debited to VIII (*f*).
(*c*) Cost of works other than boundaries of forests finally notified.
(*d*) Reduction on account of disafforestation.

Note for Second Circle.
(*a*) Omitted in column 5 as it is less than half mile.
(*b*) The variation between column 8 of last years return and column 5 of this year's is due to the disafforestation of 20 miles of forest boundary in Bellary district and 50 miles in Guntur district.
(*c*) Cleared by subordinates free of cost.
(*d*) Cleared by panchayatdars.
(*e*) Length of line repaired at Government cost.
(*f*) Represents the cost of coupe demarcation.

Note for Third Circle.
(*a*) Cleared by subordinates free of cost.
(*b*) Deduction owing to disafforestation.

Record of demarcation and maintenance of boundaries during 1921-22—*cont.*

District.	Length of boundaries artificially demarcated during the year.	Length of previously existing boundaries repaired.	Length of previously existing boundaries not repaired.	Total length of artificially marked boundaries at the close of the year.	Length of boundaries still to be demarcated at the close of the year.	Length of natural boundaries not requiring artificial marks.	Total length of boundaries at the close of the year.	Expenditure on demarcation during the year.	
								On new work.	On repairs.
Fourth Circle.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	RS.	RS.
Vellore, South ..	..	915	..	915	..	15	930	..	36
Do. West ..	..	585	44	629	..	13	642	(*c*) 144	..
Salem, East	..	1,221 (*a*) — 54	..	1,167	..	5	1,172	..	892 (*d*) — 36
Do. North ..	..	428	56	484	..	116	600	..	47 (*d*) + 4
Do. Central ..	..	305 (*b*) + 285	423 (*b*) —329	(*b*) 684	..	15	699	21	143
Do. South ..	3	917	67	987	67	..	1,054	32	91 (*d*) + 250
Total ..	3	4,371 (*b*) + 231	(*b*) 590 — 329	4,866	67	164	5,097	197	1,427
Fifth Circle.									
Kollegal	* 13	7 (*a*) 276	..	296	147	152	595	573	196
Coimbatore, North ..	* ..	(*a*) 510	72	582	170	106	858	..	19
Do. South ..	..	(*a*) 107 (*b*) 3	118	228	..	72	300	..	381
Madura	† 39	(*a*) 1,106	179	1,324	242	171	1,737	2,698	147
Tinnevelly	† ..	(*a*) 290	158	448	..	34	482	..	228
Total ..	52	7 (*a*) 2,289 (*b*) 3	527	2,878	559	535	3,972	3,271	971
Sixth Circle.									
Mangalore, North ..	..	..	* 1,228	1,228	..	103	1,331	..	..
Do. South ..	..	..	* 1,135	1,135	46	101	1,282	..	..
Wynaad	7	45	1,116	1,168	40	36	1,244	231	360
Nilambur	..	67	28	95	20	55	(*a*) 170	..	313
The Nilgiris	..	(*d*) 226	1,285	1,511	..	299	1,810	..	459
Palghat	..	* 52	250	302	16	39	(*b*) 357	(*c*) 13	..
Total ..	7	390	5,042	5,439	122	633	6,194	244	1,132
Grand total, Presidency.	162	21,692	9,328	31,182	753	2,110	34,045	7,224	11,535

Note for Fourth Circle.
(*a*) Fifty-four miles disafforested during the year.
(*b*) Correct figures furnished by the District Forest Officer.
(*c*) Cost of delimitation work in the Tirupattur Javadis.
(*d*) Added or subtracted to tally with Accountant-General's audited figures.

Note for Fifth Circle.
* Revised figures owing to transfer of Burgur range to Kollegal and Mettupalaiyam range to North Coimbatore.
† Revised figures furnished by the District Forest Officer.

Note for Sixth Circle.
(*a*) Cleared by subordinates free of cost.
(*b*) Cleared for fire protection, the cost being debited to A-VIII (*f*).
(*a*) Decrease due to transfer of Mannarghat range to Palghat division.
(*b*) Difference due to addition of Mannarghat range and transfer of Mettupalaiyam range to North Coimbatore.
(*c*) Cost of demarcation of Pundi temple.
(*d*) One hundred and seventy-eight miles cleared by subordinates free of cost.
* Usual line clearing was done by subordinates free of cost.

Annual Form No. 69.

Forest Department, Madras Presidency.

Progress made in working-plans during 1921–22.

District.	Areas for which working-plans have been completed and approved by the Chief Conservator.		Areas for which working-plans are being compiled or have been compiled but not sanctioned.		Areas for which working-plans have still to be taken in hand.	Areas for which working-plans are not at present required.	Total forest area as per Form No. 65.
	At commencement of the year.	During the year.	At commencement of the year.	Taken in hand during the year.			
			Reserved forests.				
First Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Ganjām	625	..	..	..	..	..	625
Vizagapatam ..	186	..	..	..	104	18	308
Gōdāvari, Upper ..	165	..	..	..	420	..	585
Do. Lower ..	292	..	..	..	182	..	474
Kistna	240	..	..	..	..	24	264
Total ..	1,508	..	..	..	706	42	2,256
			Reserved lands.				
Vizagapatam ..	..	..	..	..	..	2	2
Gōdāvari, Upper ..	..	..	..	..	..	247	247
Do. Lower ..	..	..	..	..	12	..	12
Kistna	..	..	..	..	..	1	1
Total ..	..	..	..	..	12	250	262
			Reserved forests.				
Second Circle.							
Bellary	(a) 50	..	88	..	290	(b) 139	(b) 567
Anantapur ..	400	49	..	..	(a) 298	...	747
Guntūr	22	..	235	..	529	3	(b) 789
Kurnool, East ..	147	..	176	..	614	33	970
Do. South ..	679	..	81	..	..	..	760
Do. West ..	458	..	..	..	..	397	855
Total ..	1,756	49	580	..	1,731	572	4,688
			Reserved lands.				
Bellary	..	..	2	..	..	1	3
			Reserved forests and lands.				
Third Circle.							
Cuddapah, North ..	46 (a) —6	..	17	..	533	6	596
Do. South ..	96	..	..	..	..	366	462
Do. West ..	35	..	65	2	..	650	752
Nellore	95	..	112	..	382	129	718
Chingleput ..	184	..	..	..	..	19	203
Chittoor	33	..	264	..	527	..	824
Vellore, North ..	410 (a) —6	..	2	..	..	47	453
Total ..	887	..	460	2	1,442	1,217	4,008

Reserved forests.

Fourth Circle.	Regular working-plans.	Schemes.	Revised or new working-plans.	Revised or new schemes.	Existing working-plans.	New working-plans or schemes.	Existing working-plans.	New working-plans or schemes.			
Vellore, South ..	415	..	..	..	..	..	(a) 127	..	67	..	482
Do. West ..	382	..	..	..	(a) 213	..	..	..	1	..	383
Salem, East ..	(b) 334	47	(a) 12	..	(a) 15	(c) 74	..	..	..	105	560
Do. North ..	96	..	..	..	..	216	..	..	209	..	521
Do. Central ..	(d) 263	..	..	..	..	..	..	(e) 36	113	..	412
Do. South ..	134	(a) 4	..	36	..	2	..	26	104	42	344
Total ..	1,624	47	..	36	..	292	..	62	494	147	2,702
Grand total ..	(a) 1,671		36		292		62		494	147	2,702

Note for Second Circle.—(a) Revised figure.
(b) Difference due to disafforestation.

Note for Third Circle.—(a) Area cancelled or disafforested.

Note for Fourth Circle.—(a) These figures are excluded from the total arrived at vertically as they have already been included in the respective figures in sub-column 1 of column 2.
(b) This figure includes 18 square miles under panchayat.
(c) Of this 10 square miles are also worked for sandal under working-plan sanctioned in B.P. Mis. No. 170, Forest, dated 6th May 1918.
(d) This figure includes—
(i) Twenty square miles under panchayat and (ii) fifteen square miles worked for sandal under sanction conveyed in B.P. Mis. No. 170, Forest, dated 6th May 1918.
(e) This figure excludes 18 square miles of the scheme as it is already included in the figure in sub-column 1 of column 2.

Progress made in working-plans during 1921-22—*cont.*

District.	Areas for which working-plans have been completed and approved by the Chief Conservator.		Areas for which working-plans are being compiled or have been compiled but not sanctioned.		Areas for which working-plans have still to be taken in hand.	Areas for which working-plans are not at present required.	Total forest area as per Form No. 65.
	At commencement of the year.	During the year.	At commencement of the year.	Taken in hand during the year.			
			Reserved forests.				
Fifth Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Kollegal * ..	(*a*) 5 (*b*) 57 (*c*) 30	..	..	..	161	685	938
Coimbatore, North. *	(*a*) 51 (*b*) 25 (*c*) 242	(*a*) 5	..	..	267	296	886
Coimbatore, South.*	(*a*) 20 (*b*) 20	..	..	..	50	337	427
Madura	(*a*) 351	..	..	15	282	12	660
Tinnevelly ..	233	..	..	..	16	176	425
Total ..	1,034	5	..	15	776	1,506	3,336
			Reserved lands.				
Tinnevelly ..	..	..	..	..	..	2	2
			Leased forests.				
Coimbatore, South.	(*a*) 27	..	..	..	..	..	27
Grand total ..	1,061	5	..	15	776	1,508	3,365
			Reserved forests.				
Sixth Circle.							
Mangalore, North.	355	..	..	..	5	..	360
Do. South.	439	..	..	..	..	..	439
Wynaad	178	..	..	..	85	..	263
Nilambur	(*d*) 8	..	96	..	..	..	(*a*) 104
The Nilgiris ..	63	..	..	..	..	349	412
Palghat	70	..	..	..	98	96	(*b*) 264
Total ..	1,113	..	96	..	188	445	1,842
			Reserved lands.				
The Nilgiris ..	75	..	..	..	5	6	(*c*) 86
			Leased forests.				
Nilambur	24	..	..	..	..	..	24
Total ..	1,212	..	96	..	193	451	1,952
Grand total, Presidency.	8,095	90	1,430	79	5,354	4,188	(*e*) 19,236

Note for Fifth Circle.—* Revised figures—
Kollegal includes area of Burgur working circle transferred from North Coimbatore.
North Coimbatore includes area of Thadagam and Mettupalayam working-plans transferred from old Central Coimbatore district.
(*a*) Areas of regular working-plan which are in force.
(*b*) Areas of temporary working schemes.
(*c*) Areas of lapsed working-plans worked, however, for extraction of dead and spiked sandal trees.

Note for Sixth Circle.—(*a*) Difference due to transfer of Mannarghat range to Palghat.
(*b*) Difference due to transfer of Mannarghat range from Nilambur and transfer of Mettupalaiyam range to North Coimbatore.
(*c*) Includes Todapatta lands, 4 square miles.
(*d*) Increase due to rounding of figures.
(*e*) Details are not given in respect of 11 square miles of reserved lands in the III Circle and 57 square miles of reserved lands in the IV Circle.

Annual Form No. 70.

Forest Department, Madras Presidency.

Communications and Buildings during 1921-22.

District.	Roads (including bridle-paths and culverts).				Buildings.		Other works.	
	New works.		Repairs.		Cost of new works.	Cost of repairs.	Cost of new works.	Cost of repairs.
	Length.	Cost.	Length.	Cost.				
First Circle.	M. F. CH.	Rs.	M. F. CH.	Rs.	Rs.	Rs.	Rs.	Rs.
Ganjam	5 6 0	4,581 — 6	64 5 5	9,519	56,574	4,976 (a) 1,991	600	..
Vizagapatam	7 2 0	353 — 7	13 1 0	540	1,339 — 35	512 (a) 1,075	20	..
Godavari, Upper ..	9 3 0	2,337	10 6 0	373	3,436	1,965 (a) 829	..	79
Do. Lower ..	1 1 6	440	36 0 0	1,480	364	2,318 (a) 1,493	18	228
Kistna	6 6 0	231	6 6 0	264	1,663	26	..	49
Total ..	30 2 6	7,929	131 2 5	12,176	63,341	15,185	638	356
Second Circle.								
Bellary	..	..	..	..	1,813	(a) 1,028 (b) 733	..	20
Anantapur	..	..	5 7 0	245	865	(a) 1,098 (b) 1,977	..	..
Guntur	3 5 0	466	..	..	720	(a) 929 (b) 1,216	493	..
Kurnool, East	6 6 0	2,332	48 5 0	2,515	4,402	(a) 670 (b) 1,230	1,256	65
Do. South	5 4 0	2,562	83 0 0	4,644	1,987	(a) 2,374 (b) 226	..	64
Do. West	10 0 0	214	26 7½ 0	5,714	1,966	(a) 280 (b) 963	900	12
Total ..	25 7 0	5,574	164 3½ 0	13,118	11,753	12,724	2,649	161
Third Circle.								
Cuddapah, North ..	..	..	..	..	4,416	1,415 (a) 756	..	404
Do. South ..	15 7 2	10,124	15 4 0	1,884	7,191	895 (a) 349	828	43
Do. West ..	2 0 13	1,292	5 4 27	303	2,813	853 (a) 1,050	109	..
Nellore	8 0 50	321	39 0 0	197	3,731	724 (a) 1,348	29	117
Chingleput	2 4 0	515	18 0 0	1,971	6,149	680 (a) 1,436	61	355
Chittoor	3 0 0	1,045	42 3 5	2,951	4,532	1,156 (a) 1,693	236	163
Vellore, North	..	..	14 0 1	1,027	1,209	1,255 (a) 885	..	18
Total ..	32 1 5	13,297	134 6 3	8,333	30,041	9,978 (a) 7,517	1,263	1,100

Note for First Circle. (a) Cost of establishment. — Deducted to agree with the Accountant-General's figures.

Note for Second Circle. (a) Cost of repairs. (b) Cost of establishment.

Note for Third Circle.—(a) Cost of establishment.

Communications and Buildings during 1921-22—*cont.*

District.	Roads (including bridle-paths and culverts)				Buildings		Other works.	
	New works.		Repairs.		Cost of new works.	Cost of repairs.	Cost of new works.	Cost of repairs.
	Length.	Cost.	Length.	Cost.				
Fourth Circle.	M. F. CH.	Rs.	M. F. CH.	Rs.	Rs.	Rs.	Rs.	Rs.
Vellore, South	..	..	11 3 0	132	43	2,248	97	348
Do. West	..	..	..	..	400	958 (*a*) 525 (*b*) — 3	92 (*b*)— 86	..
Salem, East	..	..	0 6 0	162	..	1,589 (*a*) 1,229 (*c*) — 1	170	..
Do. North	..	..	29 1 0	859	2,196	950 (*a*) 108	..	52
Do. Central	..	..	16 2 0	598	30	1,639 (*a*) 535	..	97
Do. South	2 2 0	1,284	38 0 0	1,505 (*c*)—1,461	3,965	1,093 (*a*) 495 (*c*) — 10	..	..
Forest Engineer	22 1 0	15,271	13 6 0	2,742	..	654	..	..
Total ..	24 3 0	16,555	109 2 0	4,537	6,634	12,009	273	497
Fifth Circle.								
Kollegal	8 5 0	900	101 6 0	4,328	1,150	647 (*a*) 390	644	181
Coimbatore, North ..	8 7 0	2,139	115 0 0	8,910	..	3,119 (*a*) 390	294	161
Do. South ..	1 5 0	1,163 (*b*) 1,477	29 5 0	4,340 (*a*) 583	..	1,930 (*a*) 289	735	173
Madura	15 1 0	4,951	200 4 0	12,628	4,930	2,253 (*a*) 1,902	237	301
Tinnevelly	6 4 0	2,992	42 3 0	3,170	541	4,004 (*a*) 617	..	40
Forest Engineer	3 0 0	(*c*) 23,568	..	..	..	..	..	..
Direction	(*d*)75 0 0	1,132	3 0 0	33	7,783	133	..	— 3
Total ..	118 6 0	38,322	492 2 0	33,992	14,404	15,674	1,820	853
Sixth Circle.								
Mangalore, North ..	1 1 0	808	24 3 0	624	5,954	729	189	43
Do. South ..	1 6 0	153	10 3 0	453	294	845	53	243
Wynaad	..	..	110 0 0	3,984	1,978	1,939	189	92
Nilambur	(*a*) ..	..	..	1,492	1,948	2,724	..	35
The Nilgiris	..	..	66 0 0	9,623	2,185	4,256	503	713
Palghat	47 3 0	13,762	26 2 0	16,095 (*b*)+1,291	27 869	1,921	622	45
Forest Research office ..	..	..	..	..	..	200	..	..
Direction	..	..	..	..	..	18	..	..
Total ..	50 2 0	14,723	237 0 0	33,562	40,223	12,632	1,556	1,171
Grand Total, Presidency.	279 0 0	96,400	1,267 0 0	1,05,718	1,66,396	85,719	8,199	4,138

Note for Fourth Circle.
- (*a*) Cost of establishment.
- (*b*) Added or subtracted to tally with Accountant-General's audited figures.
- (*c*) Cash recovery of service payments.

Note for Fifth Circle.
- (*a*) Cost of establishment.
- (*b*) Expenditure on improvements to tram line.
- (*c*) Includes expenditure for the earthwork and revetment wall on the new Mount Stuart Ghat Road over a distance of three miles and that on the investigation of the branch road from Topslip to Mount Stuart and water-supply scheme.
- (*d*) Alignment of inspection paths in Kodamadi and Kannikatty ranges in the Tinnevelly district.

Note for Sixth Circle.
- (*a*) Exact details of new works and repairs not available; also expenditure during part of the year has not been included in the return owing to loss of records in the Moplah rebellion.
- (*b*) Added as per Accountant-General's audited figures.

Annual Form No. 71.

Forest Department, Madras Presidency.

Register of breaches of Forest Rules during 1921-22.

District.		Cases pending from 1920-21.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.
			Injury to forest by fire.	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
									Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
First Circle.															
Ganjām ..	A ..	* 42	1	42	4	12	59	101	46	136	23	99	69	235	32
	B ..	* 48	1	320	22	19	362	410	323	1,336	18	110	341	1,446	69
	C ..	..	100	35	..	..	135	..	..	..	..	..	..	..	..
	Total ..	90	102	397	26	31	556	511	369	1,472	41	209	410	1,681	101
Vizagapatam.	A ..	* 26	2	83	11	20	116	142	88	284	9	39	97	323	45
	B ..	* 45	1	269	59	8	337	382	333	570	17	82	350	652	32
	C ..	..	41	..	..	1	42	..	..	..	..	..	..	..	..
	Total ..	71	44	352	70	29	495	524	421	854	26	121	447	975	77
Gōdāvari, Upper.	A ..	* 12	1	20	1	..	22	34	27	149	3	9	130	158	4
	B ..	* 5	1	61	10	..	72	77	64	136	8	30	72	166	5
	C ..	..	65	..	..	..	65	..	..	..	..	..	..	..	..
	Total ..	17	67	81	11	..	159	111	91	285	11	39	102	324	9
Gōdāvari, Lower.	A ..	* 30	1	36	4	4	45	75	61	170	10	25	71	195	4
	B ..	* 107	..	196	43	14	253	360	299	668	2	2	301	670	59
	C ..	..	47	10	..	6	63	..	..	..	..	..	..	..	..
	Total ..	137	48	242	47	24	361	435	360	838	12	27	372	865	63
Kistna	A ..	* 53	..	100	53	6	159	212	176	658	12	23	188	681	24
	B ..	* 41	..	233	255	26	514	555	375	1,001	51	99	426	1,100	129
	C ..	..	13	8	..	..	21	..	..	..	..	..	..	..	..
	Total ..	94	13	341	308	32	694	767	551	1,659	63	122	614	1,781	153
Total, First Circle.	A ..	163	5	281	73	42	401	564	398	1,397	57	195	455	1,592	109
	B ..	246	3	1,079	389	67	1,538	1,784	1,394	3,711	96	323	1,490	4,034	294
	C ..	..	266	53	..	7	326	..	..	..	..	..	..	..	..
Grand Total, First Circle.		409	274	1,413	462	116	2,265	2,348	1,792	5,108	153	518	1,945	5,626	403
Second Circle.															
Bellary ..	A ..	* 60	..	46	44	9	99	159	137	393	9	46	146	439	13
	B ..	* 180	..	243	232	16	491	671	385	930	190	504	575	1,434	96
	C ..	..	18	5	2	3	28	..	..	..	..	..	..	..	..
	Total ..	240	18	294	278	28	618	830	522	1,323	199	550	721	1,873	109
Anantapur.	A ..	78	..	276	115	9	400	478	364	1,025	10	54	374	1,079	104
	B ..	96	..	282	200	18	500	596	483	976	50	134	533	1,110	63
	C ..	..	14	39	..	..	53	..	..	..	..	..	..	..	..
	Total ..	174	14	597	315	27	953	1,074	847	2,001	60	188	907	2,189	167
Guntūr ..	A ..	393	..	224	148	19	391	784	526	2,178	125	436	651	2,614	133
	B ..	639	..	324	240	36	600	1,239	900	2,283	188	715	1,088	2,998	151
	C ..	..	..	21	4	4	29	..	..	..	..	..	..	..	..
	Total ..	1,032	..	569	392	59	1,020	2,023	1,426	4,461	313	1,151	1,739	5,612	284

A = Cases taken to Court. B = Cases compounded. C = Cases undetected.

* The variations between the closing balance of last year and these figures are due to transfers from B to A.

Register of breaches of Forest Rules during 1921-22—*cont.*

District.		Cases pending from 1920-21.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.
			Injury to forest by fire.	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
									Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Second Circle—cont.															
Kurnool, East.	A ..	* 33	..	42	68	1	111	144	68	198	19	72	87	270	57
	B ..	* 24	..	233	109	7	349	373	142	348	141	433	283	781	90
	C ..	..	10	7	1	..	18	..	..	..	..	..	..	..	..
Total ..		57	10	282	178	8	478	517	210	546	160	505	370	1,051	147
Kurnool, South.	A ..	15	..	75	22	6	103	118	104	379	..	7	104	386	14
	B ..	25	..	211	115	5	331	356	262	973	44	151	306	1,124	50
	C ..	..	..	42	..	..	42	..	..	..	..	..	..	..	..
Total ..		40	..	328	137	11	476	474	366	1,352	44	158	410	1,510	64
Kurnool, West.	A ..	88	..	272	62	26	360	448	360	901	16	45	376	946	72
	B ..	40	..	409	125	32	566	606	462	928	58	259	520	1,187	86
	C ..	..	..	53	..	..	53	..	..	..	..	..	..	..	..
Total ..		128	..	734	187	58	979	1,054	822	1,829	74	304	896	2,133	158
Total, Second Circle.	A ..	667	..	935	459	70	1,464	2,131	1,559	5,074	179	660	1,738	5,734	393
	B ..	1,004	..	1,702	1,021	114	2,837	3,841	2,634	6,438	671	2,196	3,305	8,634	536
	C ..	..	42	167	7	7	223	..	..	..	..	..	..	..	..
Grand Total, Second Circle.		1,671	42	2,804	1,487	191	4,524	5,972	4,193	11,512	850	2,856	5,043	14,368	929
Third Circle.															
Cuddapah, North.	A ..	7	1	141	14	4	160	167	126	533	12	32	138	565	29
	B ..	98	..	230	70	10	310	408	336	595	34	137	370	732	38
	C ..	..	98	33	2	..	133	..	..	..	..	..	..	..	..
Total ..		105	99	404	86	14	603	575	462	1,128	46	169	508	1,297	67
Cuddapah, South.	A ..	54	2	157	69	6	234	288	149	432	86	275	235	707	53
	B ..	2	..	99	29	4	132	134	100	226	15	103	115	329	19
	C ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..		56	2	256	98	10	366	422	249	658	101	378	350	1,036	72
Cuddapah, West.	A ..	149	..	204	84	15	303	452	373	873	25	94	398	967	54
	B ..	129	..	416	156	15	587	716	604	1,260	91	337	695	1,597	21
	C ..	..	..	57	2	..	59	..	..	..	..	..	..	..	..
Total ..		278	..	677	242	30	949	1,168	977	2,133	116	431	1,093	2,564	75
Nellore ..	A ..	132	..	108	210	27	345	477	227	876	38	194	265	1,070	212
	B ..	517	1	415	602	58	1,076	1,593	1,107	2,509	115	549	1,222	3,058	371
	C ..	..	..	38	..	..	38	..	..	..	..	..	..	..	..
Total ..		649	1	561	812	85	1,459	2,070	1,334	3,385	153	743	1,487	4,128	583
Chingleput.	A ..	48	..	96	30	..	126	174	134	313	11	30	145	343	29
	B ..	73	..	354	174	3	531	604	536	1,110	39	51	575	1,161	29
	C ..	..	1	2	..	..	3	..	..	..	..	..	..	..	..
Total ..		121	1	452	204	3	660	778	670	1,423	50	81	720	1,504	58
Chittoor ..	A ..	121	..	211	181	54	446	567	225	432	† 277	444	502	876	65
	B ..	58	..	452	307	68	827	885	709	1,092	123	215	832	1,307	53
	C ..	..	170	28	5	..	203	..	..	..	..	..	..	..	..
Total ..		179	170	691	493	122	1,476	1,452	934	1,524	400	659	1,334	2,183	118

A = Cases taken to Court. B = Cases compounded. C = Cases undetected.

* The variations between the closing balance of last year and these figures are due to transfers from B to A.

† Includes cases in which compounding Fees were paid by the accused after the cases were taken into court—G.O. No. 2097, Revenue, dated 12th July 1917, and B.P. No. 86, dated 11th August 1917.

Register of breaches of Forest Rules during 1921-22 —*cont.*

District.		Cases pending from 1920-21.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.
			Injury to forest by fire.	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
									Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Third Circle—cont.															
Vellore, North.	A ..	268	..	212	110	1	323	591	482	1,451	104	276	586	1,727	5
	B ..	181	..	916	462	5	1,383	1,564	1,186	2,245	21	105	1,207	2,350	357
	C ..	..	67	..	..	..	67	..	..	..	..	..	..	..	..
Total ..		449	67	1,128	572	6	1,773	2,155	1,668	3,696	125	381	1,793	4,077	362
Total, Third Circle.	A ..	779	3	1,129	698	107	1,937	2,716	1,716	4,910	553	1,345	2,269	6,255	447
	B ..	1,058	1	2,882	1,800	163	4,846	5,904	4,578	9,037	438	1,497	5,016	10,534	888
	C ..	..	336	158	9	..	503	..	..	..	..	..	..	..	..
Grand Total, Third Circle.		1,837	340	4,169	2,507	270	7,286	8,620	6,294	13,947	991	2,842	7,285	16,789	1,335
Fourth Circle.															
Vellore, South.	A ..	(*a*) 117	..	354	45	47	446	563	315	750	23	64	338	814	225
	B ..	(*a*) 448	..	1,104	302	157	1,563	2,011	1,370	2,981	55	215	1,425	3,196	586
	C ..	..	90	21	..	..	111	..	..	..	..	..	..	..	..
Total ..		565	90	1,479	347	204	2,120	2,574	1,685	3,731	78	279	1,763	4,010	811
Vellore, West.	A ..	128	..	159	9	5	173	301	222	465	13	35	235	500	66
	B ..	64	..	652	128	6	786	850	656	1,565	41	100	697	1,665	153
	C ..	..	..	15	1	..	16	..	..	..	..	..	..	..	..
Total ..		192	..	826	138	11	975	1,151	878	2,030	54	135	932	2,165	219
Salem, East.	A ..	(*a*) 616	1	574	145	13	733	1,349	851	2,515	31	132	882	2,647	467
	B ..	(*a*) 204	..	888	249	2	1,139	1,343	806	1,800	9 (*b*)+61	219	876	2,019	467
	C ..	..	94	6	..	..	100	..	..	..	..	..	..	..	..
Total ..		820	95	1,468	394	15	1,972	2,692	1,657	4,315	101	351	1,758	4,666	934
Salem, North.	A ..	(*a*) 17	..	25	17	13	55	72	26	34	11	18	37	52	35
	B ..	(*a*) 50	2	192	78	29	301	351	226	420	45	81	271	501	80
	C ..	..	97	..	..	2	99	..	..	..	..	..	..	..	..
Total ..		67	99	217	95	44	455	423	252	454	56	99	308	553	115
Salem, Central.	A ..	94	..	417	68	18	503	597	396	1,178	23 (*b*)+10	85	429	1,263	168
	B ..	536	..	228	86	18	332	868	354	785	(*b*) 23	65	377	850	491
	C ..	..	39	..	..	..	39	..	..	..	..	..	..	..	..
Total ..		630	39	645	154	36	874	1,465	750	1,963	56	150	806	2,113	659
Salem, South.	A ..	(*a*) 488	..	436	51	8	495	983	521	1,730	22 (*b*)+39	177	582	1,907	401
	B ..	(*a*) 447	..	1,765	154	37	1,956	2,403	1,660	3,251	60	233	1,720	3,484	683
	C ..	..	26	47	..	..	73	..	..	..	..	..	..	..	..
Total ..		935	26	2,248	205	45	2,524	3,386	2,181	4,981	121	410	2,302	5,391	1,084
Total, Fourth Circle.	A ..	1,460	1	1,965	335	104	2,405	3,865	2,331	6,672	172	511	2,503	7,183	1,362
	B ..	1,749	2	4,829	997	249	6,077	7,826	5,072	10,802	294	913	5,366	11,715	2,460
	C ..	..	346	89	1	2	438	..	..	..	..	..	..	..	..
Grand Total Fourth Circle.		3,209	349	6,883	1,333	355	8,920	11,691	7,403	17,474	466	1,424	7,869	18,898	3,822

A = Cases taken to Court. B = Cases compounded. C = Cases undetected.
(*a*) Revised figures furnished by the District Forest Officer. (*b*) Cases withdrawn.

Register of breaches of Forest Rules during 1921-22—*cont.*

District.		Cases pending from 1920-21.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of the year.
			Injury to forest by fire	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
									Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Fifth Circle.															
Kollegal.	A	* 21	..	2	2	1	5	26	21	88	4	15	25	103	1
	B	* ..	..	203	127	29	359	359	326	750	23	48	349	798	10
	C	..	26	..	..	..	26	..	..	..	..	..	..	..	..
	Total	21	26	205	129	30	390	385	347	838	27	63	374	901	11
Coimbatore, North.	A	20	..	32	14	2	48	68	64	131	2	6	66	137	2
	B	12	5	489	204	12	710	722	650	1,034	32	87	682	1,121	40
	C	..	42	..	26	..	68	..	..	..	..	..	..	..	..
	Total	32	47	521	244	14	826	790	714	1,165	34	93	748	1,258	42
Coimbatore, South.	A	* 25	..	40	9	7	56	81	69	155	2	7	71	162	10
	B	* 30	1	273	40	28	342	372	294	754	19	63	313	817	59
	C	..	12	4	..	..	16	..	..	..	..	..	..	..	..
	Total	55	13	317	49	35	414	453	363	909	21	70	384	979	69
Madura ..	A	* 711	..	695	124	23	842	1,553	841	3,746	56	629	897	4,376	656
	B	* 256	1	705	121	12	839	1,095	463	1,332	244	450	707	1,782	388
	C	..	167	7	..	1	175	..	..	..	..	..	..	..	..
	Total	† 967	168	1,407	245	36	1,856	2,648	1,304	5,078	300	1,079	1,604	6,158	1,044
Tinnevelly.	A	35	1	199	45	5	250	285	244	629	14	32	258	661	27
	B	169	..	593	289	60	942	1,111	774	1,852	14	48	788	1,900	323
	C	..	30	8	2	..	40	..	..	..	..	..	..	..	..
	Total	204	31	800	336	65	1,232	1,396	1,018	2,481	28	80	1,046	2,561	350
Total, Fifth Circle.	A	812	1	968	194	38	1,201	2,013	1,239	4,749	78	689	1,317	5,439	696
	B	467	7	2,263	781	141	3,192	3,659	2,507	5,722	332	696	2,839	6,418	820
	C	..	277	19	28	1	325	..	..	..	..	..	..	..	..
Grand Total, Fifth Circle.		1,279	285	3,250	1,003	180	4,718	5,672	3,746	10,471	410	1,385	4,156	11,857	1,516
Sixth Circle.															
Mangalore, North.	A	* 41	11	17	4	1	33	74	41	75	11	18	52	93	22
	B	* 35	15	416	21	12	464	499	375	663	44	76	419	739	80
	C	..	29	..	..	..	29	..	..	..	..	..	..	..	..
	Total	76	55	433	25	13	526	573	416	738	55	94	471	832	102
Mangalore, South.	A	* 42	4	23	2	10	39	81	44	103	19	37	63	140	18
	B	* 24	8	195	3	10	214	238	155	419	‡ 27	45	182	464	56
	C	..	19	..	..	..	19	..	..	..	..	..	..	..	..
	Total	66	31	216	5	20	272	319	199	522	46	82	245	604	74
Wynaad ..	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	B	2	..	9	4	8	21	23	..	..	19 / ‡+ 1	28 / 1	20	29	3
	C	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	2	..	9	4	8	21	23	..	..	20	29	20	29	3
Nilambur ..		Information not furnished by the District Forest Officer as the records were all destroyed in the Moplah rebellion.													
The Nilgiris.	A	* 7	..	6	4	8	18	25	20	79	2	6	22	85	3
	B	* 19	..	115	76	26	217	238	183	484	36	105	219	589	17
	C	..	33	..	..	2	35	..	..	..	..	..	..	..	..
	Total	26	33	121	80	36	270	261	203	563	38	111	241	674	20
Palghat ..	A	18	..	32	7	3	42	60	41 / 5	215 (a)	..	..	46	215	14
	B	25	1	122	42	20	185	210	77 / 86	196 (a)	19	(a) ..	182	196	28
	C	..	1	7	..	3	11	..	..	..	..	..	..	..	..
	Total	(b) 43	2	161	49	26	238	270	209	411	19	..	228	411	42
Total, Sixth Circle.	A	108	15	78	17	22	132	240	151	472	32	61	183	533	57
	B	105	24	855	146	76	1,101	1,206	876	1,762	146	255	1,022	2,017	184
	C	..	82	7	..	5	94	..	..	..	..	..	..	..	..
Grand Total, Sixth Circle.		213	121	940	163	103	1,327	1,446	1,027	2,234	178	316	1,205	2,550	241
Total, Presidency.	A	3,989	25	5,356	1,776	383	7,540	11,529	7 394	23,274	1,071	3,461	8,465	26,736	3,064
	B	4,629	37	13,610	5,134	810	19,591	24,220	17,061	37,472	1,977	5,880	19,038	43,352	5,182
	C	..	1,349	493	46	22	1,909	..	..	..	..	..	..	..	..
Grand Total, Presidency.		8,618	1,411	19,459	6,955	1,215	29,040	35,749	24,455	60,746	3,048	9,341	27,503	70,088	8,246

A = Cases taken to Court. B = Cases compounded. C = Cases undetected.

* The variations between the closing balances of last year and these figures are due to transfers from B to A.

† Includes 126 cases relating to unreserved lands not furnished in the last year's return. ‡ Cases withdrawn.

(*a*) Information not available. The cases relate to unreserved lands.

(*b*) Excludes cases relating to Mettupalayiam range.

Annual Form No. 72.

Forest Department, Madras Presidency.

Area of forest tracts protected from fire during 1921-22.

District.	Forest tracts.	Area protected during the previous year.	During the year under report.			Cost during the year under report.
			Area attempted to be protected.	Fires.	Actually protected.	
	First Circle.	Acs.	Acs.	Acs.	Acs.	Rs.
Ganjam ..	Special protection ..	45,772	46,839	3,048	43,791	2,992
	General do. ..	219,709	220,039	61,461	158,578	3,158
						(*a*) — 87
	Total, Ganjam ..	265,481	266,878	64,509	202,369	6,063
Vizagapatam.	Special protection ..	102,622	94,181	2,727	91,454	1,479
	General do. ..	65,061	5,485	..	5,485	(*a*) — 122
						39
	Total, Vizagapatam ..	167,683	99,666	2,727	96,939	1,396
Gōdāvari Upper.	Special protection ..	516,659	532,269	102,957	429,312	2,562
						(*a*) +4,778
Gōdāvari, Lower.	Special protection ..	150,680	152,636	5,069	147,567	4,246
	General do. ..	81,710	82,568	428	82,140	708
	Total, Gōdāvari, Lower ..	232,390	235,204	5,497	229,707	4,954
Kistna ..	Special protection ..	11,710	14,220	41	14,179	420
	General do. ..	30,727	32,811	..	32,811	655
	Total, Kistna ..	42,437	47,031	41	46,990	1,075
Total, First Circle.	Special protection ..	827,443	840,145	113,842	726,303	16,355
	General do. ..	397,207	340,903	61,889	279,014	4,473
	Grand total ..	1,224,650	1,181,048	175,731	1,005,317	20,828
	Second Circle.					
Bellary ..	Special protection ..	50,063	36,754	898	35,856	164
	General do. ..	184,169	252,392	3,737	248,655	..
	Total ..	234,232	289,146	4,635	284,511	164
Anantapur ..	Special protection ..	125,140	139,008	541	138,467	418
	General do. ..	333,547	338,762	466	338,296	..
	Total ..	458,687	477,770	1,007	476,763	418
Guntūr ..	Special protection ..	..	Nil.	..	..	..
	General do. ..	511,425	504,939	96	504,843	..
	Total ..	511,425	504,939	96	504,843	..
Kurnool, East.	Special protection ..	15,596	Transferred to general protection.			
	Early burning ..	297,920	201,690	238	201,452	728
	General protection ..	304,647	419,093	1,042	418,051	1,247
	Total ..	618,163	620,783	1,280	619,503	1,975
Kurnool, South.	Special protection ..	137,478	147,987	5,745	142,242	5,001
	Early burning ..	186,128	215,653	7,715	207,938	1,561
	General protection ..	122,914	122,766	..	122,766	Nil
	Total ..	446,520	486,406	13,460	472,946	6,562
Kurnool, West.	Special protection ..	33,288	29,991	60	29,931	775
	Early burning	321,494	348,283	Nil.	348,283	1,532
	General protection ..	25,297	9,868	Nil	9,868	Nil.
	Total ..	380,079	388,142	60	388,082	2,307
Total, Second Circle.	Special protection ..	361,565	353,740	7,244	346,496	6,358
	Early burning	805,542	765,626	7,953	757,673	3,821
	General protection ..	1,481,999	1,647,820	5,341	1,642,479	1,247
	Grand total ..	2,649,106	2,767,186	20,538	2,746,648	11,426
	Third Circle.					
Cuddapah, North.	Special protection ..	264,227	275,246	29,614	245,632	5,939
	General do. ..	54,936	55,107	1,590	53,517	..
	Total ..	319,163	330,353	31,204	299,149	5,939
Cuddapah, South.	Special protection ..	200,929	218,072	42,837	175,235	4,604
	General do. ..	45,223	45,231	2,811	42,420	945
	Total ..	246,152	263,303	45,648	217,655	5,549

(*a*) Added or subtracted as per Accountant-General's figures.

Note.—This return deals with a period of only 9 months as per Chief Conservator's Proceedings Routine No. 1049, dated 7th July 1921 as three months have already been included in the last year's report.

Area of forest tracts protected from fire during 1921–22—*cont.*

District.	Forest tracts.	Area protected during the previous year.	During the year under report.			Cost during the year under report.
			Area attempted to be protected.	Fires.	Actually protected.	
	Third Circle—cont.	ACS.	ACS.	ACS.	ACS.	RS.
Cuddapah, West.	Special protection ..	205,579	211,495	11,786	199,709	3,964
	General do. ..	258,345	269,283	8,805	260,478	96
	Total ..	464,924	480,778	20,591	460,187	4,060
Nellore ..	Special protection ..	149,184	149,469	2,468	147,001	1,971
	General do. ..	..	..	..	..	..
	Total ..	149,184	149,469	2,468	147,001	1,971
Chingleput..	Special protection ..	25,523	15,975	42	15,933	1,115
	General do. ..	104,553	113,951	..	113,951	..
	Total ..	130,076	129,926	42	129,884	1,115
Chittoor ..	Special protection ..	114,661	120,686	17,347	103,339	6,056
	General do. ..	403,737	407,020	7,718	399,302	..
	Total ..	518,398	527,706	25,065	502,641	6,056
Vellore, North.	Special protection ..	29,919	31,088	1,540	29,548	604
	General do. ..	261,632	262,197	3,548	258,649	..
	Total ..	291,551	293,285	5,088	288,197	604
Total ..	Special protection ..	990,022	1,022,031	105,634	916,397	24,253
	General do. ..	1,129,426	1,152,789	24,472	1,128,317	1,041
	Total, Third Circle ..	2,119,448	2,174,820	130,106	2,044,714	25,294
	Fourth Circle.					
Vellore, South.	Special protection ..	99,043	100,998	137	100,861	860
	General do. ..	191,862	193,280	1,378	191,902	..
	Total ..	290,905	294,278	1,515	292,763	..
Vellore, West.	Special protection ..	102,791	103,762	931	102,831	221
	General do. ..	138,233	140,872	407	140,465	..
	Total ..	241,024	244,634	1,338	243,296	..
Salem, East..	Special protection ..	190,017	190,332	383	189,949	868
	General do. ..	172,056	145,650	583	145,067	+(*a*) 247
	Total ..	362,073	335,982	966	335,016	..
Salem, North.	Special protection ..	74,317	52,565	7,142	45,423	1,563
	General do. ..	257,768	281,228	11,948	269,280	..
	Total ..	332,085	333,793	19,090	314,703	..
Salem, Central.	Special protection ..	104,799	118,863	1,216	117,647	1,461
	General do. ..	147,416	136,082	143	135,939	(*a*)+ 218
	Total ..	252,215	254,945	1,359	253,586	..
Salem, South.	Special protection ..	(*b*) 115,303	116,086	671	115,415	714
	General do. ..	(*b*) 100,8 10	103,897	1	103,896	..
	Total ..	216,113	219,983	672	219,311	..
Total ..	Special protection ..	686,270	682,606	10,480	672,126	5,687
	General do. ..	1,008,145	1,001,009	14,460	986,549	465
	Total, Fourth Circle ..	1,694,415	1,683,615	24,940	1,658,675	6,152
	Fifth Circle.					
Kollegal ..	Special protection ..	38,380	34,127	908	33,219	3,495
	General do. ..	559,521	565,100	3,446	561,654	..
	Total ..	597,901	599,227	4,354	594,873	3,495

(*a*) Expenditure incurred for clearing top lines.
(*b*) Revised figures furnished by District Forest officers.

Area of forest tracts protected from fire during 1921—*cont.*

District.	Forest tracts.	Area protected during the previous year.	During the year under report.			Cost during the year under report.
			Area attempted to be protected.	Fires.	Actually protected.	
	Fifth Circle—cont.	ACS.	ACS.	ACS.	ACS.	RS.
Coimbatore, North.	Special protection ..	22,020	19,463	504	18,959	5,187
	General do. ..	511,674	530,816	13,276	517,540	805
	Total ..	533,694	550,279	13,780	536,499	5,992
Coimbatore, South.	Special protection ..	47,350	47,350	911	46,439	2,674
	General do. ..	200,993	200,993	1,546	199,447	..
	Total ..	248,343	248,343	2,457	245,886	2,674
Madura ..	Special protection ..	175,461	140,542	11,385	129,157	4,099
	General do. ..	245,746	281,788	4,898	276,890	(*a*)+ 1709 ..
	Total ..	421,207	422,330	16,283	406,047	5,808
Tinnevelly ..	Special protection ..	32,235	35,688	1,917	33,771	5,132
	General do. ..	201,749	206,712	9,534	197,178	..
	Total ..	233,984	242,400	11,451	230,949	5,132
Total ..	Special protection ..	315,446	277,170	15,625	261,545	22,296
	General do. ..	1,719,683	1,785,409	32,700	1,752,709	805
	Total Fifth Circle ..	2,035,129	2,062,579	48,325	2,014,254	23,101
	Sixth Circle.					
Mangalore, North.	Special protection ..	32,752	32,812	206	32,606	1,475
	General do. ..	196,689	197,164	1,024	196,140	1,662
	Total ..	229,441	229,976	1,230	228,746	3,137
Mangalore, South.	Special protection ..	106,577	107,342	972	106,370	1,899
	General do. ..	170,454	171,458	1,038	170,420	1,089
	Total ..	277,031	278,800	2,010	276,790	2,988
Wynaad ..	Special protection ..	109,546	139,596	345	139,251	5,319
Nilambar ..	Special protection ..	81,743	81,743	170	81,573	2,822
The Nilgiris.	Special protection ..	45,114	76,657	4,734	71,923	5,017
	General do. ..	237,301	242,616	3,299	239,317	..
	Total ..	282,415	319,273	8,033	311,240	5,017
Palghat ..	Special protection ..	91,308	126,227	1,545	124,682	4,119
	General do. ..	54,825	42,707	78	42,629	322
	Total ..	146,133	168,934	1,623	167,311	4,441
Total ..	Special protection ..	467,040	564,385	7,372	556,413	20,681
	General do. ..	659,269	653,946	5,439	648,507	3,073
	Total, Sixth Circle ..	1,126,309	1,218,331	13,411	1,204,920	23,754
Total, Presidency.	Special protection ..	3,647,786	3,740,077	260,797	3,479,280	95,630
	General do. ..	6,395,729	6,581,876	144,301	6,437,575	11,104
	Early burning ..	805,542	765,626	7,953	757,673	3,821
	Grand total, presidency ..	10,849,057	11,087,579	413,051	10,674,528	110,555

(*a*) Amount spent on fire protection of common boundary between Zamin and State forests.

Sixth Circle Note.—The figures in column 3 are those reported by the District Forest officers as the area protected during the previous calendar year.

Annual Form No. 73.

Forest Department, Madras Presidency.

Area closed and open to grazing during 1921–22.

District.	Closed to all animals.		Open to grazing			
			Of all animals except goats.		Of all animals except browsers (sheep and goats).	
	Whole year.	Part of year.	Whole year.	Part of year.	Whole year.	Part of year.
First Circle.						
Reserved forests.	Sq. mls.	Sq. mls.	Sq. mls.	Sq. mls.	Sq. mls.	Sq. mls.
Ganjam	88	..	537	..	..	..
Vizagapatam	16	2	288	2	..	..
Godavari, Upper	..	..	585	..	..	..
Do. Lower	24	..	450	..	..	..
Kistna	54	8	202	..	..	..
Total ..	182	10	2,062	2	..	..
Reserved lands.						
Vizagapatam	..	..	2	..	..	..
Godavari, Upper	..	..	247	..	..	..
Do. Lower	..	..	12	..	..	..
Kistna	..	..	1	..	..	..
Total ..	..	..	262	..	..	..
Second Circle.						
Reserved forests.						
Bellary	51	..	516	..	..	..
Anantapur	20	62	665	..	..	..
Guntur	82	..	417	..	290	..
Kurnool, East	..	..	970	..	..	..
Do. South	551	..	209	..	..	..
Do. West	162	8	685	..	..	..
Total ..	866	70	3,462	..	290	..
Reserved lands.						
Bellary	3	..	..	..	..	..
Guntur	..	..	0·06	..	..	..
Total ..	3	..	0·06	..	..	..
Third Circle.						
Reserved forests.						
Cuddapah, North	78	..	518	..	..	..
Do. South	90	..	372	..	..	..
Do. West	67	..	685	..	..	..
Nellore	248	399	71	..	..	..
Chingleput	58	131	14	..	..	..
Chittoor	160	123	541	..	..	..
Vellore, North	130	6	317	..	..	..
Total ..	831	659	2,518	..	..	..
Reserved lands.						
Nellore	11	..	..	..	..	..

Area closed and open to grazing during 1921-22—*cont.*

District.	Closed to all animals.		Open to grazing			
			Of all animals except goats.		Of all animals except browsers (sheep and goats).	
	Whole year.	Part of year.	Whole year.	Part of year.	Whole year.	Part of year.
FOURTH CIRCLE.						
Reserved forests.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Vellore, South	77	..	405	..	..	..
Do. West	15	..	368	..	..	..
Salem, East	103	6	445	6	..	..
Do. North	49	..	472	..	..	..
Do. Central	34	4	370	4	..	..
Do. South	60	..	284	..	..	..
Total ..	338	10	2,344	10	..	..
Reserved lands.						
Vellore, South	(a) ..	..	..	..	..	..
Do. West	..	..	(a) ..	..	..	..
Salem, East	..	..	12	..	..	..
Do. North	..	..	..	..	..	..
Do. Central	6	..	6	..	..	..
Do. South	(a) ..	..	33	..	..	..
Total ..	6	..	51	..	..	..
FIFTH CIRCLE.						
Reserved forests.						
Kollegal ..	3	..	935	..	..	..
Coimbatore, North	49	..	837	..	..	..
Do. South	251	..	190	..	13	..
Madura ..	102	..	248	..	310	..
Tinnevelly ..	292	34	99	..	..	..
Total ..	697	34	2,309	..	323	..
Reserved lands.						
Tinnevelly ..	2	..	..	..	..	..
Grand total ..	699	34	2,309	..	323	..
SIXTH CIRCLE.						
Reserved forests.						
Mangalore, North	10	..	..	..	350	..
Do. South	8	..	..	..	431	..
Wynaad ..	..	..	..	..	206	57
Nilambūr ..	108	..	..	..	..	..
The Nilgiris ..	23	..	389	..	..	..
Palghat ..	162	..	102	..	..	..
Total ..	311	..	491	..	987	57
Reserved lands.						
Nilambūr ..	20	..	..	..	..	..
The Nilgiris ..	9	..	77	..	..	..
Total ..	29	..	77	..	..	..
Grand total, Presidency ..	3,276	783	13,576	12	1,600	57

(a) Below one square mile.

ANNUAL

Forest Department,

Return of grazing in the

District.	At enhanced or special rates.					Grazing on payment. At full rates.				
	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Fees received.	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Fees received.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
First Circle.					Rs.					Rs.
Reserved forests.										
Ganjam	..	..	..	..	..	6,634	32,858	S 92	..	8,657
Vizagapatam ..	(a) 603	(a) 6,829	(a) S 912	..	4,246	22	4,057	S 1	..	* 769
Godavari, Upper..	..	..	..	..	..	..	..	..	..	..
	(b) 1,427	(b) 839	..	..	1,385	..	..	..	..	..
Do. Lower.	(a) 7,808	(a) 7,882	..	..	5,875	..	..	..	..	..
	..	..	..	..	* 5	..	..	..	..	..
	..	..	..	..	‡ 28	..	..	..	..	..
	(b) 591	(b) 5,578	(b) S 1,052	..	4,047	4,959	17,716	S 15,864	..	6,669
	..	(d) 1,315	..	..	..	..	..	..	..	† 1,100
Kistna	..	..	..	..	..	..	..	..	..	* 1,303
	..	..	..	..	..	..	..	..	..	‡ 150
	10,429	22,443	S 1,964	..	15,553	11,615	54,631	S 15,957	..	16,095
	..	..	..	..	* 5	..	..	..	..	† 1,100
Total ..	..	..	..	..	‡ 28	..	..	..	..	* 1,303
	..	..	..	..	..	..	..	..	..	‡ 150
Reserved lands.										
Godavari, Upper ..	..	..	..	..	..	..	..	..	..	..
Unreserved lands.										
Ganjam	..	..	..	..	..	..	..	..	..	* 12
Godavari, Lower..	(a) 10,065	(a) 10,221	..	..	7,588	..	..	..	..	* 1,377
Kistna	..	..	..	..	..	1,002	255	..	..	423
										* 66
Total ..	10,065	10,221	..	..	7,588	1,002	255	..	..	423
										* 1,455
	20,494	32,664	S 1,964	..	23,141	12,617	54,886	S 15,957	..	16,518
	..	..	..	..	* 5	..	..	..	..	† 1,100
Grand Total ..	..	..	..	..	‡ 28	..	..	..	..	* 2,758
	..	..	..	..	..	..	..	..	..	‡ 150
Second Circle.										
										17,055
Bellary	(a) 589	4,989	2,477	..	7,406	7,014	36,948	79,966	..	(g) 2,384
										(h) 6,614
										43,017
Anantapur	..	..	..	..	..	(b) 1,690	51,350	62,608	..	(g) 288
										(h) 636
										4,733
Guntur	(c) 3,859	17,561	35,501	..	39,772	1,181	2,760	27,623	..	(g) 5,936
										(h) 2,895
										13,445
Kurnool, East ..	(d) 1,517	16,933	..	..	19,967	1,315	16,258	17,320	..	(g) 12
										(h) 2,325
Do. South ..	(e) ..	354	..	..	354	1,370	12,846	10,379	..	10,045
	28	7,783	20	..	7,849	4,753	26,915	31,251	..	24,835
Do. West ..	(f) ..	..	..	..	..	..	762	..	..	(i) 191
	..	..	..	..	..	..	..	..	..	(h) 230
Total ..	5,993	57,620	37,998	..	75,348	17,323	147,839	229,147	..	1,34,641

Note for First Circle.—

S = Sheep. G = Goats. * Sale-proceeds of fodder grass.

† Revenue from forests handed over to panchayat management. ‡ Sale-proceeds of mangrove leaves.

(1) The full rates are 6 annas per buffalo, 3 annas per cow or bullock and 1 anna 6 pies per sheep.

(2) The enhanced or special rates are—(a) Re. 1 per buffalo, 8 annas per cow or bullock and 4 annas per sheep.
(b) 12 annas per buffalo, 6 annas per cow and 3 annas per sheep.
(c) 8 annas per buffalo, 4 annas per cow or bullock and 2 annas per sheep.
(d) Re. 1 per plough bull.

(3) The privileged rates are— (e) 4 annas per buffalo, 2 annas per cow or bullock and 1 anna per sheep.
(f) 1 anna per buffalo, cow or bullock.

FORM No. 74.

Madras Presidency.

State forests during 1921-22.

Number of animals.						Grazing free. Number of animals.											
At privileged rates.						By right under settlement.					During pleasure of Government or otherwise than under settlement.					Total value of fees at full rates.	Grand total of value at full rates.
Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Fees received.		Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Value of fees at full rates.	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Value of fees at full rates.		
				Actual.	Value at full rates.												
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
				Rs.	Rs.					Rs.					Rs.	Rs.	Rs.
..	..	..	..	..	..	334	1,491	..	..	592	214	1,786	..	..	415	1,007	9,664
..	..	..	..	..	..	..	..	..	..	..	..	5,160	..	..	968	968	5,983
(e) 4,489	(e) 28,940	(e) S 6,486	..	5,145	7,718	..	..	..	..	..	4,100	36,549	S 41	..	8,394	8,394	15,112
(e) 1,185	(e) 9,902	..	..	1,534													13,883
(f) 498	(f) 11,366	..	..	741	4,619	..	..	..	..	..	954	8,781	..	..	2,004	2,004	* ..
..	..	..	..	..													† 5
..	..	..	..	..													‡ 28
																	10,716
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	† 1,100
																	* 1,303
																–	‡ 150
6,172	50,208	S 6,486	..	7,420	12,337	834	1,491	..	..	592	5,268	52,276	S 41	..	11,781	12,373	56,358
																	* 1,308
																	‡ 178
																	† 1,100
(e) 866	(e) 7,146	(e) S 30	..	1,112	1,667	..	..	..	..	..	..	..	..	..	..	..	1,667
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	* 12
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7,588
																	* 1,377
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	423
																	* 66
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,011
																	* 1,455
7,038	57,354	S 6,516	..	8,532	14,004	834	1,491	..	..	592	5,268	52,276	S 41	..	11,781	12,373	66,036
																	* 2,763
																	‡ 178
																	† 1,100
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	33,459
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	43,941
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	53,336
..	..	..	..	..	..	647	716	S 102									
..	..	..	..	..	..	..	..	G 5,211	..	4,666	..	..	..	..	..	..	40,415
..	..	..	..	..	..	..	..	..									
..	..	..	..	..	..	12	11	S 57	..	22	..	..	..	..	..	..	10,421
..	..	..	..	..	..	261	202	330	..	379	..	..	..	..	..	..	33,484
..	..	..	..	..	..	920	929	489									
								G 5,211	..	5,067	..	..	..	..	..	..	2,15,056

Note for Second Circle—(*a*) Enhanced rates are Rs. 2 per buffalo, Re. 1 per cow and As. 8 per sheep. Full rates are As. 6 per buffalo, As. 3 per cow and 1 anna 6 pies per sheep.

(*b*) Full rates are Re. 1 per buffalo, As. 8 per cow and As. 4 per sheep.

Enhanced rates are :—(*c*) Re. 1-8-0 per buffalo, As. 12 per cow and As. 6 per sheep. Full rates are As. 8 per buffalo As. 4 per cow and As. 2 per sheep.

(*d*) Rs. 2 per buffalo and Re. 1 per cow. Full rates are As. 12 per buffalo, As. 8 per cow and As. 4 per sheep.

(*e*) Re. 1 per cow. Full rates are like those of (*d*).

(*f*) Like those of (*a*). Full rates are like those of (*d*).

(*g*) Sale-proceeds of fodder grass.

(*h*) Collection from panchayatdars.

(*i*) Extra fees collected from Sugalis for grazing at 4 annas per cow in Nallamalais for two months o ly (May and June 1921) in addition to the rates paid last year for Yerramalais.

Return of grazing in the

District.	Grazing on payment.									
	At enhanced or special rates.					At full rates.				
	Buffaloes.	Cows and bullocks.	Goats and Sheep.	Other animals.	Fees received.	Buffaloes.	Cows and bullocks.	Goats and Sheep.	Other animals.	Fees received.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
THIRD CIRCLE.					RS.					RS.
Cuddapah, North ..	..	(a) 6,768	..	..	6,768	4,701	12,081	48,433	..	8,569 (b) 26
Do. South ..	..	(a) 1,992	..	..	1,992	285	15,711	12,556	..	4,230 (b) 27
Do. West ..	..	(a) 6,446	..	..	6,446	2,786	23,623	65,114	..	11,578 (b) 2 (d) 1,438
Nellore	(f) 44	787	95	..	900	..	..	..	..	(d) 1,092 (g) 73,330
Chingleput	..	..	..	..	..	..	..	..	..	(d) 1,759 (g) 23,884
Chittoor	(h) 100 (i) 1,038 ..	1,585 62,457 ..	102 24,035 ..	..	1,836 38,275 ..	..	..	21	..	2 (b) 40 (d) 150 (f) 39
Vellore, North	(i) 361	34,850	23,902	..	23,762	32	935	..	..	187 (d) 3,508 (k) 25
Total ..	1,543	114,885	48,134	..	79,979	7,804	52,350	126,124	..	1,29,886
FOURTH CIRCLE.										
Vellore, South	..	..	..	..	..	(a) 65 (b) 249 (a) .. (b) 204 (d) .. (e) .. (f) .. (n) 50 (a) 121 (g) 162 .. .. (m) 793 (g) 4 (b) .. (d) 256 .. .. (d) .. (g) 15 (n) 867	5,736 24,564 11,802 22,924 422 5,859 625 2,762 4,375 31,029 .. .. 34,239 12,450 36,701 .. .. .. 6,827 12,207 3,354	3,183 6,774 .. 774 .. 2,737 .. 4,438 1,022 2,561 .. .. 596 2,695 .. 13,475 .. .. .. 177 22,250 5,329	..	7,458 14,224 11,802 11,860 158 3,443 156 (l) + 1 953 5,128 18,356 (h) 8,511 (i) 706 (j) 4 (k) 12 (l) — 164 17,863 7,765 18,350 2,719 (k) 14 (l) + 229 2,593 13,141 1,266 (l) — 3
Total ..	..	..	..	..	..	2,286	215,876	66,011	..	1,46,545

Note for Third Circle.—

Note.—The full rates are 6 annas per buffalo, 3 annas per cow, bullock or other animal and 1½ annas per sheep.

Cuddapah, North.—(a) Rupee 1 per cow.
(b) Penning licence fees.
(c) Privileged rates—1 anna per cow and 6 pies per sheep.

Do. *South.*—(a) Rupee 1 per cow.

Do. *West.*—(a) Rupee 1 per cow.
(d) Panchayat fees.
(e) Privileged rate—1½ annas per cow.

Nellore.—(f) Rupees 1-8-0 per buffalo, 1 rupee per cow and 8 annas per sheep.
(g) Kancha rent.

Chittoor.—(h) Rupees 2 per buffalo, rupee 1 per cow and 8 annas per sheep.
(i) Rupee 1 per buffalo, 8 annas per cow and 4 annas per sheep.
(j) Royalty on hay.

Vellore, North.—(i) Rupee 1 per buffalo, 8 annas per cow and 4 annas per sheep.
(k) Fees collected for hill village grazing blocks.

State forests during 1921–22—*cont.*

Number of animals. At privileged rates.						Grazing free. Number of animals. By right under settlement.					During pleasure of Government or otherwise than under settlement.					Total value of fees at full rates.	Grand total of value at full rates.
				Fees received.													
Buffaloes.	Cows and bullocks.	Goats and Sheep.	Other animals.	Actual.	Value at full rates.	Buffaloes.	Cows and bullocks.	Goats and Sheep.	Other animals.	Value of fees at full rates.	Buffaloes.	Cows and bullocks.	Goats and Sheep.	Other animals.	Value of fees at full rates.		
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
				Rs.	Rs.					Rs.					Rs.	Rs.	Rs.
..	(c) 200	330	..	23	68	..	..	..	..	..	190	45	850	..	159	159	15,590
..	..	..	..	..	..	..	461	..	..	86	..	..	..	..	..	..	6,335
..	(c) 260	..	..	24	49	..	..	..	..	..	..	..	..	..	..	..	19,513
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	75,322
..	..	..	..	..	..	..	..	..	..	..	..	81	..	..	15	15	25,658
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	40,342
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	27,482
..	460	330	..	47	117	..	461	..	..	86	190	126	850	..	174	174	2,10,242
(n) 1,451	7,396	183	..	1,948 (c) 3,403	5,195 9,075	..	..	..	..	..	..	..	..	..	..	..	35,952
(n) 1,665	7,578	1,156	..	2,116	5,643	..	..	..	..	..	..	..	..	..	..	..	34,016
(b) ..	472	60	..	251	502	..	..	..	..	..	..	..	..	..	..	..	45,514
(n) 20	1,716	..	..	329	987												
..	..	..	..	(c) 4,452	11,472												
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17,863
..	..	..	..	..	..	..	..	..	..	..	..	190	..	..	95	95	29,172
..	..	..	..	(c) 8,885	23,693	..	..	..	..	..	..	..	..	..	..	..	40,690
3,036	17,162	1,399	..	2,1384	56,567	..	..	..	..	..	..	190	..	..	95	95	2,03,207

Note for Fourth Circle.—

1 buffalo = 2 cows = 4 sheep.

(a) Rupee 1 per cow unit.
(b) 8 annas per cow unit.
(c) Panchayat fees.
(d) 6 annas per cow unit.
(e) 8 annas per cow, 12 annas per buffalo and 3 annas per sheep.
(f) 4 annas per cow unit.
(g) 9 annas per cow unit.
(h) Grazing lease amount.
(i) Grazing fees realized in Tanjore district.
(j) Grazing assessment in the chitteris and Atur kalroyans.
(k) Penning fees.
(l) Added or subtracted to tally with Accountant-General's audited figures.
(m) 12 annas a buffalo, 8 annas a cow and 4 annas a sheep.
(n) 3 annas per cow unit.

Return of grazing in the

District.	Grazing on payment.									
	At enhanced or special rates					At full rates.				
	Buffaloes.	Cows and bullocks.	Goats and Sheep.	Other animals.	Fees received.	Buffaloes.	Cows and bullocks.	Goats and Sheep.	Other animals.	Fees received.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
FIFTH CIRCLE.					RS.					RS.
Kollegal	(a) 3,102	(a) 62,285	(a) 1,866	..	34,711	..	..	..	..	..
Coimbatore, North ..	(a) 4,522	(a) 69,163	(a) 20,799	..	44,303	..	..	..	..	..
	..	(b) 1,647	(b) 956	..	2,125					
	..	..	..	..	(e) 1,831					
	..	..	..	..	(f) — 4					
Do. South ..	(b) 73	(b) 305	..	..	451	..	..	..	..	..
	(x) 54	(a) 6,319	(a) 162	..	3,254					
	..	..	..	..	(e) 75					
	..	..	..	..	(g) 485					
Madura	(c) 216	(c) 4,502	(c) 2,843	(c) 270	1,656	..	..	..	..	..
	(a) 23	(a) 11,517	(a) 1,004	..	6,033					
	(d) 10	(d) 13,388	..	..	10,056					
	..	..	..	..	(g) 2,780					
Tinnevelly	(a) 427	(a) 9,970	(a) 3,601	..	6,312	131	5,561	16,045	..	2,596
	..	..	..	..	(g) 525					
Total ..	8,427	1,79,096	31,231	270	1,14,593	131	5,561	16,045	..	2,596
SIXTH CIRCLE.										
Reserved forests.										
Mangalore, North ..	(a) 1,261	12,351	..	..	5,420	..	..	..	..	..
Do. South ..	(a) 2,030	13,935	..	..	6,494	..	..	..	..	..
Wynaad	(b) 2,365	4,420	..	..	4,575	..	..	..	..	..
Nilambur	(c) ..	..	..	..	..	..	..	..	..	..
The Nilgiris	..	(b) 529	36	..	274	12,113	17,721	1,782	..	* 8,072
	..	..	..	..	..	(k) 158	(k) 106	..	..	(f) 92
	..	(b) 625	180	..	715					(f) 145
Palghat..	(d) 29	5,380	1,200	..	3,019	..	..	..	..	(g) 4,442
Total ..	5,685	37,240	1,416	..	20,497	12,271	17,827	1,782	..	12,751
Reserved lands.										
The Nilgiris	..	(b) 634	..	..	317	143	503	..	..	* 148
Total, VI Circle ..	5,685	37,874	1,416	..	20,814	12,414	18,330	1,782	..	12,899
Grand total, Presidency ..	42,142	422,139	120,743	270	3,13,908	52,575	494,842	455,066	..	4,47,093

Note for Fifth Circle.—

The figures given in columns 4, 9 and 25 denote sheep.

Full rates.—As. 6 per buffalo, As. 3 per cow or bullock and As. 1-6 per sheep.

(a) Re. 1 per buffalo, As. 8 per cow or bullock and As. 4 per sheep.
(b) Rs. 2 per buffalo, Re. 1 per cow or bullock and As. 8 per sheep.
(c) As. 8 per buffalo, As. 4 per cow or bullock, As. 2 per sheep and As. 4 per other animal.
(d) Rs. 1-8-0 per buffalo, As. 12 per cow or bullock and As. 6 per sheep.
(e) Sale-proceeds of fodder grass.
(f) Value of permits exchanged.
(g) Revenue from forests handed over to panchayat management.

Note for Sixth Circle.—

* Full rates.—Buffaloes As. 6, cows As. 3 and sheep As. 1-6.

(a) Buffaloes As. 10 and cows As. 6.
(b) Buffaloes Re. 1, cows As. 8 and sheep As. 4.
(c) No grazing allowed in the district.
(d) Buffaloes Rs. 2, cows Re. 1 and sheep As. 8.
(e) 2,750 cows for 2 days at 6 As. per 100 per day.
22,527 sheep for 2 days at 3 As. per 100 per day.
300 sheep for 3 days at do. do.
1,475 sheep for 1 day at do. do.
(f) Lease amount of fodder grass.
(g) Revenue from forests under panchayat management.
(k) Elephant.
(x) Calves—half rates.

State forests during 1921-22—*cont.*

Number of animals.						Grazing free. Number of animals.										
At privileged rates.						By right under settlement.					During pleasure of Government or otherwise than under settlement.					
Buffaloes.	Cows and bullocks.	Goats and Sheep.	Other animals.	Fees received. Actual.	Fees received. Value at full rates.	Buffaloes.	Cows and bullocks.	Goats and Sheep.	Other animals.	Value of fees at full rates.	Buffaloes.	Cows and bullocks.	Goats and Sheep.	Other animals.	Value of fees at full rates.	Total value of fees at full rates.	Grand total of value at full rates.
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
				Rs.	Rs.					Rs.					Rs.	Rs.	Rs.
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	34,711
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	48,255
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4,265
..	..	..	..	..	..	..	..	..	..	..	618	4,554	435	..	1,502	..	22,027
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9,433
..	..	..	..	..	..	..	..	..	..	..	618	4,554	435	..	1,502	..	1,18,691
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,420
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,494
..	..	..	..	..	..	..	..	..	..	..	..	..	..	(*h*) 1	90	90	4,665
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	2,750	24,302	..	(*g*) 110	(*g*) 2,794	..	..	..	..	..	80	..	..	..	30	2,824	11,262
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,321
..	2,750	24,302	..	110	2,794	..	..	..	..	..	80	..	..	1	120	2,914	36,162
..	..	..	..	..	..	..	..	..	..	..	1,788	113	..	..	691	691	1,156
..	2,750	24,302	..	110	2,794	..	..	..	..	..	1,868	113	..	1	811	3,605	37,318
10,074	77,726	32,547	..	30,073	73,482	1754	2,881	5,700	..	5,745	7,944	57,259	1,326	1	14,363	20,108	8,54,591

Abstract of animals permitted to grazing on payment in reserved forests and reserved lands in the Presidency.

Circle.	Buffaloes.	Bullocks and cows.	Sheep.	Other animals.	Total.
First Circle	40,149	144,904	24,437	..	209,490
Second ,, ...	23,316	205,459	267,145	..	495,920
Third ,, ...	9,347	167,695	174,588	..	351,630
Fourth ,, ...	5,322	233,038	67,410	..	305,770
Fifth ,, ...	8,558	184,657	47,276	270	240,761
Sixth ,, ...	18,099	58,954	27,500	..	104,553
Grand total ..	104,791	994,707	608,356	270	1,708,124

ANNUAL FORM No. 75.

Forest Department, Madras Presidency.

Area under artificial reproduction, 1921–22.

District.	Area in acres.				Expenditure during the year.		Total expenditure from commencement.		Revenue during the year.	Total revenue from date of creation of plantation.
	On 1st April 1921.	Added during the year.	Excluded during the year.	Area on 31st March 1922.	Creation.	Upkeep.	Creation.	Upkeep.		
FIRST CIRCLE.										
A.—Regular Plantations.										
	ACS.	ACS.	ACS.	ACS.	RS.	RS.	RS.	RS.	RS.	RS.
Vizagapatam ..	51	..	..	51	..	120	2	(a) 2,206	75	(a) 5,189
Godāvari, Lower ..	114	..	38	76	..	72	31,150	15,645	5,048	(a) 84,983
Kistna	39	..	5	34	..	114	1,735	7,732	562	4,215
Total ..	204	..	43	161	..	306	32,887	25,583	5,685	94,387
B.—Taungya Plantations.										
Ganjām	2	..	..	2	..	..	3	..	..	..
Godāvari, Upper ..	43	74	..	117	423	..	659	..	..	..
Total ..	45	74	..	119	423	..	662	..	..	..
C.—Cultural Operations.										
Ganjām	111	10	..	121	200	202	— 275	896	..	..
Vizagapatam ..	28	11	23	16	6	..	(b) 226	..	..	..
Godāvari, Upper ..	22	2	..	24	9	1	110	1	..	..
Do. Lower ..	2,553	56	..	2,609	218	..	3,024	1,032	..	..
Kistna	102	10	8	104	127	94	706	152	..	719
Total ..	2,816	89	31	2,874	560	297	4,341	2,081	..	719
Grand total ..	3,065	163	74	3,154	983	603	37,890	27,664	5,685	95,106
SECOND CIRCLE.										
A.—Regular Plantations.										
Bellary	579	..	..	579	..	260	9,423	63,346	191	6,765
Guntūr	569	..	419	150	..	..	(c) 11,195	(c) 7,866	1,368	(c) 6,155
Kurnool, East ..	130	..	..	130	..	..	38,471	26,045	..	..
Do. West ..	1,430	..	..	1,430	..	909	2,92,254	67,581	637	19,240
Total ..	2,708	..	419	2,289	..	1,169	3,51,343	1,64,838	2,196	32,160
***B.—Taungya Plantations*—Nil.**										
C.—Cultural Plantations.										
Bellary	6,790	..	..	6,790	..	..	27,981	3,006	..	..
Anantapur	140	28	8	160	135	..	(d) 498	80	..	..
Guntūr	..	..	..	..	..	..	1,844	6	..	..
Kurnool, East ..	536	195	..	731	807	..	11,752	3,561	..	..
Do. South ..	527	..	..	527	165	..	5,465	1,765	..	..
Do. West ..	5,302	706	..	6,008	1,532	615	(e) 25,006	3,757	..	..
Total ..	13,295	929	8	14,216	2,639	615	72,546	12,175	..	..
THIRD CIRCLE.										
A.—Regular Plantations.										
Cuddapah, North ..	10	..	..	10	..	..	560	..	..	..
Do. South ..	38	..	..	38	..	237	23	(f) 1,258	1,714	6,852
Do. West ..	..	..	..	..	..	..	..	..	..	..
Nellore	1,680	..	..	1,680	..	45	1,56,709	17,299	22,895	3,07,139
Chingleput	..	..	..	..	..	..	..	..	..	..
Chittoor	61	..	..	61	..	508	..	2,546	..	51
Vellore, North ..	325	..	..	325	..	1,701	24,287	1,42,052	2,024	94,186
Total ..	2,114	..	..	2,114	..	2,491	1,81,579	1,63,155	26,133	4,08,228

(a) Revised figures furnished by the District Forest Officer.
(b) Excludes figures on areas abandoned.
(c) The figures shown in columns 8, 9 and 10 exclude amounts relating to the areas excluded last year.
(d) Revised figures (due to wrong totals adopted in 1920–21).
(e) Wrong total last year.
(f) Revised figure.

Area under artificial reproduction, 1921-22—*cont.*

District.	Area in acres.				Expenditure during the year.		Total expenditure from commencement.		Revenue during the year.	Total revenue from date of creation of plantation.
	On 1st April 1921.	Added during the year.	Excluded during the year.	Area on 31st March 1922.	Creation.	Upkeep.	Creation.	Upkeep.		
	ACS.	ACS.	ACS.	ACS.	RS.	RS.	RS.	RS.	RS.	RS.
THIRD CIRCLE—*cont.*										
***B.—Taungya Plantations*—Nil.**										
C.—Cultural Operations.										
Cuddapah, North ..	..	..	..	..	..	..	..	..	..	..
Do. South ..	51	..	(*a*) 51	..	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	..	..	..	..	..
Nellore	(*b*) 416	..	..	416	..	..	2,767	..	..	..
Chingleput	..	..	..	..	..	..	..	..	..	..
Chittoor	4,539	1,480	239	5,780	2,504	603	(*b*) 4,990	(*b*) 1,524	..	..
Vellore, North ..	1,537	129	..	1,666	795	..	1,734	154	..	579
Total ..	6,543	1,609	290	7,862	3,299	603	9,491	1,678	..	579
Grand total ..	8,657	1,609	290	9,976	3,299	3,094	1,91,070	1,64,833	26,133	4,08,807
FOURTH CIRCLE.										
A.—Regular Plantations.										
Vellore, South ..	92	5	..	97	178	510	3,102	1,203	40	5,680
B.—Taungya Plantations.										
Vellore, South ..	8	..	..	8	..	..	50	..	..	..
C.—Cultural Operations.										
Vellore, South ..	23,127	3,927	..	27,054	289	..	1,502	..	..	..
Do. West ..	1,141	..	..	1,141	..	..	137	..	..	..
Salem, East ..	13,919	545	..	14,464	207	39	3,389	3,572	..	..
Do. Central ..	1,563	668	50	2,181	342	141	10,136	544	..	..
Do. South ..	302	..	302	..	..	..	63	..	..	..
Total ..	40,052	5,140	352	44,840	838	180	15,227	4,116	..	..
Grand total ..	40,152	5,145	352	44,945	1,016	690	18,379	5,319	40	5,680
FIFTH CIRCLE.										
A. Regular Plantations.										
Coimbatore, South ..	81	133	..	214	2,141	1,086	3,510	1,861	..	..
Madura	1,446	69	..	1,515	2,473	164	67,021	8,867	87	9,611
Tinnevelly	5,362	..	..	5,362	9	44	7,929	3,292	2,725	24,605
Total ..	6,889	202	..	7,091	4,623	1,294	78,460	14,020	2,812	34,216
B. Taungya Plantations.										
Tinnevelly	23	..	..	23	..	99	47	237	..	..
C. Cultural Operations.										
Kollegal	363	(*c*) 121	..	484	..	..	1,003 (*c*)+391	196	..	..
Coimbatore, North ..	1,044	12	(*c*) 121	935	158	135	3,001 (*c*)—391	933	..	..
Do. South ..	46	5	..	51	140	27	(*d*) 399	(*d*) 161	..	..
Tinnevelly	4,599	311	..	4,910	1,454	466	7,232	7,199	60	215
Total ..	6,052	449	121	6,380	1,752	628	11,635	8,489	60	215
Grand total ..	12,964	651	121	13,494	6,375	2,021	90,142	22,746	2,872	34,431
SIXTH CIRCLE.										
A. Regular Plantations.										
Mangalore, North ..	..	..	..	..	..	..	..	..	..	..
Do. South ..	52	..	..	52	..	..	10,357	..	..	516
Wynaad	379	14	..	393	562	858	(*e*) 16,543	21,884	1,035	15,696
Nilambur	6,881	21	..	6,902	7,795	6,040	5,83,393	5,79,629	2,64,222	41,64,727
The Nilgiris ..	1,743	92	..	1,835	3,551	701	10,013	3,15,467	33,137	8,91,052
Palghat	..	..	..	..	..	..	..	..	..	..
Total ..	9,055	127	..	9,182	11,908	7,599	6,20,306	9,16,980	2,98,394	50,71,991

(*a*) Burnt by forest fires. (*b*) Revised figure.
(*c*) Particulars relating to Bargur range transferred from North Coimbatore to Kollegal.
(*d*) Rs. 36 expenditure under creation was wrongly included by the District Forest Officer under cost of upkeep in the return of last year.
(*e*) Revised figure furnished by the District Forest Officer.

Area under artificial reproduction, 1921-22—*cont.*

District.	Area in acres.				Expenditure during the year.		Total expenditure from commencement.		Revenue during the year.	Total revenue from date of creation of plantation.
	On 1st April 1921.	Added during the year.	Excluded during the year.	Area on 31st March 1922.	Creation.	Upkeep.	Creation.	Upkeep.		
				SIXTH CIRCLE—*cont.*						
				B. Taungya Plantations.						
	ACS.	ACS.	ACS.	ACS.	RS.	RS.	RS.	RS.	RS.	RS.
Mangalore, South ..	57	..	..	57	..	75	37	75	..	..
Wynaad	635	..	..	635	..	..	..	10,895	..	..
The Nilgiris ..	32	..	..	32	..	338	504	4,771	..	..
Palghat	54	..	..	54	..	105	..	234	..	..
Total ..	778	..	..	778	..	518	541	15,975	..	..
				C. Cultural Operations.						
Mangalore, North ..	583	1,270	143	1,710	1,839	93	3,410	107	..	..
Do. South ..	1,069	610	..	1,679	1,974	1,018	5,998	1,618	..	..
Wynaad	4,602	15	..	4,617	804	..	5,608	8,598	..	..
Nilambur	..	..	..	..	..	..	..	..	..	..
The Nilgiris ..	45	..	..	45	797	18	1,024	18	..	..
Palghat	583	217	242	558	6,813	164	* 10,720	1,361	..	..
Total ..	6,882	2,112	385	8,609	12,227	1,293	26,760	11,102	..	..
Grand total, Regular Plantations.	21,062	334	462	20,934	16,709	13,369	12,67,677	12,85,779	3,35,260	56,46,662
Taungya Plantations.	854	74	..	928	423	617	1,300	16,212	..	..
Cultural Operations.	75,640	10,328	1,187	84,781	21,315	3,616	1,40,000	39,641	60	1,513
Grand total for the Presidency.	97,556	10,736	1,649	106,643	38,447	17,602	14,08,977	13,41,632	3,35,320	56,48,175

* Excludes Rs. 167 on account of 242 acres excluded during the year.

ANNUAL FORM No. 76.

Forest Department, Madras Presidency.

Outturn (in thousands of cubic feet solid) of timber and fuel during the year 1921-22 and agency of exploitation.

ANNUAL

Forest Department,

Outturn (in thousands of cubic feet solid) of timber and fuel

Division.	Timber in the rough logs.					Timber in the rough poles.					Sawn or square timber.				
	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
						(In thousands of cubic feet.)									
FIRST															
I. Reserved															
Ganjam	185	84	22	..	291	8	31	..	..	39	..	..	4	..	4
Vizagapatam	1	1	..	..	2	..	2	..	..	2	..	..	..	..	..
Gōdāvari, Upper ..	10	..	..	..	10	2	..	..	..	2	..	..	..	..	..
Do. Lower ..	6	36	..	..	42	..	..	..	..	..	..	..	..	..	..
Kistna	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	202	121	22	..	345	10	33	..	..	43	..	..	4	..	4
II. Leased															
III. Reserved															
IV. Unreserved															
Ganjam	3	30	6	..	39	..	..	..	..	..	..	..	..	..	..
Vizagapatam	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gōdāvari, Upper ..	10	1	..	..	11	1	10	..	..	11	..	..	..	..	..
Do. Lower ..	..	105	20	..	125	..	1	..	..	1	..	5	..	..	5
Kistna	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	13	136	26	..	175	1	11	..	..	12	..	5	..	..	5
Grand total ..	215	257	48	..	520	11	44	..	..	55	..	5	4	..	9
SECOND															
I. Reserved															
Bellary	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Anantapur	..	22	..	..	22	..	..	..	..	..	..	..	..	..	..
Guntūr	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kurnool, East	2	3	..	..	5	1	..	1	..	2	6	..	..	..	6
Do. South ..	4	67	..	..	71	1	10	1	..	12	..	..	..	..	..
Do. West † ..	16	..	..	..	16	80	..	3	..	83	2	..	..	..	2
Total ..	22	92	..	..	114	82	10	5	..	97	8	..	..	..	8
II. Leased															
III. Reserved															
Bellary	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
IV. Unreserved															
Bellary	..	..	..	..	..	..	35	..	..	35	..	..	..	..	..
Anantapur	..	113	4	..	117	..	..	..	..	..	..	..	..	..	..
Guntur	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kurnool, East	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	62	..	..	62	..	..	..	..	..	..	..	..	..	..
Do. West § ..	..	71	..	..	71	..	..	..	..	..	..	..	..	..	..
Total ..	..	246	4	..	250	..	35	..	..	35	..	..	..	..	..
Grand total ..	22	338	4	..	364	82	45	5	..	132	8	..	..	..	8
THIRD															
I. Reserved															
Cuddapah, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nellore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chingleput	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chittoor	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Vellore, North ..	..	3	..	..	3	..	..	..	..	..	..	..	..	..	..
Total ..	..	3	..	..	3	..	..	..	..	..	..	..	..	..	..

Note for the First Circle.

REMARKS.—The figures are actuals except in the following cases :—

(1) *Ganjām*—Unreserved lands—Column 3.—This includes an estimated quantity of 10,160 cubic feet arrived at by conversion of value at 20 cubic feet per rupee realised by the Revenue department.

(2) *Gōdāvari, Lower*—Unreserved lands—Column 3.—This includes 25,000 cubic feet of timber obtained by conversion of sale amount into outturn at one cubic foot per one anna.

(3) *Kistna*—Unreserved lands—Column 3.—Estimate calculated at one cubic foot per one anna on the value realised and two annas per cubic foot in case of palmyra trees granted free.

Note for Second Circle.

(1) *Bellary*—The figure in column 8 under "Unreserved lands" is an estimate worked on the revenue under II (2) from unreserved lands. Two-thirds of the revenue was taken to first class timber and one-third to second class timber and the quantity in cubic feet was arrived at by calculating at Re. 0-4-0 per cubic foot for the former and Re. 0-2-0 per cubic foot for the latter as was done in previous years.

(2) *Anantapur*.—Timber is taken at Rs. 2-8-0 a cart-load =20 cubic feet and fuel at Rs. 1-4-0 a cart-load = 40 cubic feet.

• Actuals furnished from coupe contractor's accounts. † Actuals. ‡ Actuals from coupe contractor's accounts.
(a) Actuals estimates. § Compiled from taluk chitta figures.

FORM No. 76.

Madras Presidency.

during the year 1921–22 and agency of exploitation.

Miscellaneous.					Total timber.					Fuel.					Total outturn.
Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	
(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
CIRCLE.															
Forests.															
						(*In thousands of cubic feet.*)									
..	..	..	...	..	193	115	26	..	334	135	233	81	..	449	783
..	..	..	..	..	1	3	..	..	4	4	179	..	..	183	187
7	..	..	..	7	19	..	..	..	19	..	..	..	..	..	19
..	..	..	..	..	6	36	..	..	42	23	1,297	..	..	1,320	1,362
..	1	..	..	1	..	1	..	..	1	11	484	..	..	495	496
7	1	..	..	8	219	155	26	..	400	173	2,193	81	..	2,447	2,847
Forests—Nil.															
Lands—Nil.															
Lands.															
..	..	..	..	..	3	30	6	..	39	2	128	..	..	130	169
1	41	1	..	43	1	41	1	..	43	..	31	..	..	31	74
6	15	4	..	25	17	26	4	..	47	5	40	..	..	45	92
..	..	..	..	..	..	111	20	..	131	2	729	..	..	731	862
..	35	30	..	65	..	35	30	..	65	..	86	..	..	86	151
7	91	35	..	133	21	243	61	..	325	9	1,014	..	..	1,023	1,348
14	92	35	..	141	240	398	87	..	725	182	3,207	81	..	3,470	4,195
CIRCLE.															
Forests.															
..	..	..	..	..	..	..	..	..	..	16	208	..	..	224	224
..	..	..	..	..	..	22	..	..	22	..	76	..	..	76	98
1	12	..	..	13	1	12	..	..	13	5	140	..	..	145	158
..	..	..	..	..	9	3	1	..	13	64	3	..	..	67	80
1	..	1	..	2	6	77	2	..	85	..	102	..	..	102	187
..	..	..	..	..	98	..	3	..	101	1,863	46	..	..	1,909	2,010
2	12	1	..	15	114	114	6	..	234	1,948	575	..	..	2,523	2,757
Forests—Nil.															
Lands.															
..	..	..	..	..	..	..	..	..	..	..	9	..	..	9	9
Lands.															
..	..	..	..	..	..	35	..	..	35	..	‡ 128	..	..	128	163
..	..	..	..	..	..	113	4	..	117	..	68	..	..	68	185
..	40	(*a*) 8	..	48	..	40	8	..	48	..	130	..	..	130	178
..	11	2	..	13	..	11	2	..	13	..	5	..	..	5	18
..	..	..	..	..	..	62	..	..	62	..	33	..	..	33	95
..	..	..	..	..	..	71	..	..	71	..	30	..	..	30	101
..	51	10	..	61	..	332	14	..	346	..	394	..	..	394	740
2	63	11	..	76	114	446	20	..	580	1,948	978	..	..	2,926	3,506
CIRCLE.															
Forests.															
1	40	..	..	41	1	40	..	..	41	..	728	..	..	728	769
5	32	3	..	40	5	32	3	..	40	73	1,178	..	..	1,251	1,291
1	18	8	..	27	1	18	8	..	27	2	513	..	..	515	542
1	..	..	..	1	1	..	..	..	1	20	1,652	..	..	1,672	1,673
..	..	..	..	..	..	..	..	..	..	1	139	..	..	140	140
1	52	..	..	53	1	52	..	..	53	54	938	..	..	992	1,045
..	..	..	..	..	..	3	..	..	3	2	204	..	..	206	209
9	142	11	..	162	9	145	11	..	165	152	5,352	..	..	5,504	5,669

Note for the Third Circle.

Ouddapah, West.— { Reserved forests.—Actuals.
Unreserved lands.—Estimated at 1 anna per cubic foot of timber and 3 pies per cubic foot of dead wood.

Chingleput— { Reserved forests.—Actuals.
Unreserved lands.—Free grants of timbers are actuals. Timber and fuel by purchasers are based on money value.

Vellore, North.— { Timber.—Re. 0-2-0 per cubic foot.
Fuel.—Re. 0-1-0 do.
Palmyra tree.—25 = cubic feet.

Chittoor.—All figures in this statement except those under purchasers' Timber and fuel 'against unreserves are actuals. The excepted items are estimates calculated on the money value obtained from sale of trees on darkhast lands at 1 anna per cubic foot of timber and 3 pies per cubic foot of fuel.

Outturn (in thousands of cubic feet solid) of timber and fuel

Division.	Timber in the rough logs.					Timber in the rough poles.					Sawn or square timber.				
	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
															THIRD
						(*In thousands of cubic feet.*)									*II. Leased*
															III. Reserved
															IV. Unreserved
Cuddapah, North	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nellore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chingleput	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chittoor	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Vellore, North	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Grand total ..	..	3	..	..	3	..	..	..	..	..	..	..	..	..	..
															FOURTH
															I. Reserved
Vellore, South	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West	1	6	..	..	7	..	..	..	..	..	..	..	..	..	..
Salem, East	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. North	..	..	..	..	..	..	..	..	..	..	6	..	..	..	6
Do. Central	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Total ..	1	6	..	..	7	..	..	..	..	..	7	..	..	..	7
															II. Leased
															III. Reserved
															IV. Unreserved
Vellore, South	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Salem, East	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. North	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Do. Central	..	..	..	..	..	..	1	1	..	2	..	..	..	..	..
Do. South	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	..	..	..	..	..	..	1	1	..	2	1	..	..	..	1
Grand total ..	1	6	..	..	7	..	1	1	..	2	8	..	..	..	8
															FIFTH
															I. Reserved
Kollegal	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Coimbatore, North ..	2	..	..	..	2	..	..	..	..	..	7	..	..	..	7
Do. South ..	6	..	..	..	6	..	..	..	..	..	28	2	..	..	30
Madura	4	..	..	..	4	..	..	..	..	..	..	..	..	..	..
Tinnevelly	..	33	..	..	33	..	2	..	..	2	..	1	..	..	1
Total ..	13	33	..	..	46	..	2	..	..	2	35	3	..	..	38
															II. Leased
Coimbatore, South ..	117	..	..	..	117	..	..	..	..	..	..	..	..	..	..
															III. Reserved
															IV. Unreserved
Kollegal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Coimbatore, North ..	..	42	..	..	42	..	..	..	..	..	..	..	..	..	..
Madura	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tinnevelly	..	7	11	..	18	..	..	..	..	..	..	..	..	..	..
Total ..	..	49	11	..	60	..	..	..	..	..	..	..	..	..	..
Grand total ..	130	82	11	..	223	..	2	..	..	2	35	3	..	..	38

Note for the Fourth Circle.

Removals by Government Agency.—Actuals.
(Sandalwood—Factor of conversion 1 ton = 40 cubic feet.)
Free grants—Actuals.
Purchasers—timber and fuel.—Estimate based on money value collected.

Note for the Fifth Circle.

Reserved and leased forests.—The figures given are actuals.
Unreserved lands.—Estimate based on money value collected.

during the year 1921-22 and agency of exploitation—*cont.*

Miscellaneous.					Total timber.					Fuel.					
Government. (17)	Purchasers. (18)	Free-grantees. (19)	Right-holders. (20)	Total. (21)	Government. (22)	Purchasers. (23)	Free-grantees. (24)	Right-holders. (25)	Total. (26)	Government. (27)	Purchasers. (28)	Free-grantees. (29)	Right-holders. (30)	Total. (31)	Total outturn. (32)
CIRCLE—*cont.*															
Forests—Nil.															
Lands—Nil.															
Lands.															
..	2	..	..	2	..	2	..	..	2	..	82	..	..	82	84
..	2	..	..	2	..	2	..	..	2	..	4	..	..	4	6
..	24	..	..	24	..	24	..	..	24	..	430	..	..	430	454
..	55	8	..	63	..	55	8	..	63	..	47	..	..	47	110
..	37	3	..	40	..	37	3	..	40	..	229	..	..	229	269
..	241	14	..	255	..	241	14	..	255	..	543	..	..	543	798
..	126	23	..	149	..	126	23	..	149	..	63	..	..	63	212
..	487	48	..	535	..	487	48	..	535	..	1,398	..	..	1,398	1,933
9	629	59	..	697	9	632	59	..	700	152	6,750	..	..	6,902	7,602
CIRCLE.															
Forests.															
3	5	..	..	8	3	5	..	..	8	1	248	..	..	249	257
2	..	..	..	2	3	6	..	..	9	1	96	..	..	97	106
1	..	..	..	1	1	..	..	..	1	..	97	..	..	97	98
..	..	..	..	..	6	..	..	..	6	1	54	..	..	55	61
..	..	..	..	..	..	..	..	..	..	..	90	..	..	90	90
..	1	..	..	1	1	1	..	..	2	8	185	..	..	193	195
6	6	..	..	12	14	12	..	..	26	11	770	..	..	781	807
Forests—Nil.															
Lands—Nil.															
Lands.															
..	106	5	..	111	..	106	5	..	111	..	57	..	..	57	168
..	23	1	..	24	..	23	1	..	24	..	8	..	..	8	32
..	159	2	..	161	..	159	2	..	161	..	186	..	..	186	347
..	51	11	..	62	1	51	11	..	63	..	64	..	..	64	127
..	85	..	..	85	..	86	1	..	87	..	13	..	..	13	100
..	243	2	..	245	..	243	2	..	245	..	122	..	..	122	367
..	667	21	..	688	1	668	22	..	691	..	450	..	..	450	1,141
6	673	21	..	700	15	680	22	..	717	11	1,220	..	..	1,231	1,948
CIRCLE.															
Forests.															
2	1	..	..	3	3	1	..	..	4	..	262	..	..	262	266
..	..	..	..	..	9	..	..	..	9	..	692	..	..	692	701
2	2	..	..	4	36	4	..	..	40	..	323	..	..	323	363
..	18	..	..	18	4	18	..	..	22	3	579	..	..	582	604
..	..	..	..	..	..	36	..	..	36	3	538	..	..	541	577
4	21	..	..	25	52	59	..	..	111	6	2,394	..	..	2,400	2,511
Forests.															
..	..	..	..	..	117	..	..	..	117	..	..	..	..	..	117
Lands—Nil.															
Lands.															
..	254	..	..	254	..	254	..	..	254	..	7	..	..	7	261
..	..	..	..	..	..	42	..	..	42	..	22	..	..	22	64
..	232	1	..	233	..	232	1	..	233	..	112	..	..	112	345
..	..	..	..	..	..	7	11	..	18	..	77	3	..	80	98
..	486	1	..	487	..	535	12	..	547	..	218	3	..	221	768
4	507	1	..	512	169	594	12	..	775	6	2,612	3	..	2,621	3,396

Outturn (in thousands of cubic feet solid) of timber and fuel

Division	Timber in the rough logs.					Timber in the rough poles.					Sawn or square timber.				
	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
					(*In thousands of cubic feet.*)										SIXTH
															I. Reserved
Mangalore, North ..	25	..	..	..	25	..	..	..	..	..	..	..	..	..	..
Do. South ..	21	1	..	..	22	..	..	..	..	..	2	..	..	..	2
Wynaad	..	..	..	..	..	4	..	..	..	4	77	30	..	..	107
Nilambur (*a*)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
The Nilgiris	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..
Palghat	103	8	..	..	111	..	..	..	..	..	..	..	..	..	..
Total ..	149	9	..	..	158	4	1	..	..	5	79	30	..	..	109
															II. Leased
Nilambur (*a*)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
															III. Reserved
The Nilgiris	..	..	..	..	..	49	..	..	..	49	5	..	..	..	5
															IV. Unreserved
Mangalore, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wynad	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nilambur (*a*)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
The Nilgiris	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Palghat	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total, VI Circle ..	149	9	..	..	158	53	1	..	..	54	84	30	..	..	114
Grand Total, Presidency.	517	695	63	..	1,275	146	93	6	..	245	135	88	4	..	177

Note for Sixth Circle.

Reserved forests and lands :—

Government Agency.—Actuals.

Purchasers—Timber.—Actuals. *Fuel* based on contractor's accounts.

Unreserved lands.—Estimates based on money value.

(*a*) Figures not available, owing to the destruction of records during the Mappilla rebellion.

during the year 1921-22 and agency of exploitation—*cont.*

Miscellaneous.					Total timber.					Fuel.					Total outturn.
Government. (17)	Purchasers. (18)	Free-grantees. (19)	Right-holders. (20)	Total. (21)	Government. (22)	Purchasers. (23)	Free-grantees. (24)	Right-holders. (25)	Total. (26)	Government. (27)	Purchasers. (28)	Free-grantees. (29)	Right-holders. (30)	Total. (31)	(32)
CIRCLE.															
Forests.						(*In thousands of cubic feet*).									
..	..	..	..	..	25	..	..	..	25	64	470	..	..	534	559
..	..	..	..	..	23	1	..	..	24	136	43	..	..	179	203
..	8	..	..	8	81	38	..	..	119	..	..	..	..	..	119
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	5	..	..	5	..	6	..	..	6	390	198	..	..	588	594
..	..	..	..	..	103	8	..	..	111	70	543	..	..	613	724
..	13	..	..	13	232	53	..	..	285	660	1,254	..	..	1,914	2,199
Forests.															
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lands.															
..	1	..	..	1	54	1	..	..	55	..	..	..	..	..	55
Lands.															
..	359	1	15	375	..	359	1	15	375	..	286	..	..	286	661
..	45	..	3	48	..	45	..	3	48	..	32	..	..	32	80
..	13	..	..	13	..	13	..	..	13	..	6	..	..	6	19
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	6	..	..	6	..	6	..	..	6	..	12	..	..	12	18
..	40	1	..	41	..	40	1	..	41	..	80	..	..	80	121
..	463	2	18	483	..	463	2	18	483	..	416	..	..	416	899
..	477	2	18	497	286	517	2	18	823	660	1,670	..	..	2,330	3,153
35	2,441	129	18	2,623	833	3,267	202	18	4,320	2,959	16,437	84	..	19,480	23,800

ANNUAL FORM No. 77.

Forest Department, Madras Presidency.

Outturn of minor forest produce during the year 1921–22.

Circle.	Description of produce.	Produce removed or utilized					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value.	Value.	Value.	Value.
	Reserved Forests.	NO.	RS.	RS.	RS.	RS.	RS.
First Circle	Bamboos	23,531	554	52,390	230	..	53,174
	Grazing and fodder grass	..	..	41,654	11,781	592	54,027
	Other produce.	QRS.					
	Grass (hay, thatch, korai, etc.).	4,120	25	675	..	..	700
	Tamarind, soapnuts, galnuts, nux-vomica, shekoi, etc.	24	27	3,796	..	500	4,323
	Horns, honey, wax, resin, gum, skins, etc.	..	..	513	..	..	513
	Tangedu, etc., barks and fibres.	32	..	1,560	..	..	1,560
	Stone, gravel, earth, etc.	35,286	69	731	..	..	800
	Leaves for platter	..	..	1	..	..	1
	Date and palmyra leaves, stalks, etc.	..	..	19	..	..	19
	Miscellaneous including, tree-tapping and tree-owners' fees.	75	2	14,464	..	..	14,466
	Total, minor produce	39,537	123	21,759	..	500	22,382
	Total, Reserved forests	..	677	1,15,803	12,011	1,092	1,29,583
	Reserved lands.	NO.					
	Bamboos	400	2	70	..	..	72
	Grazing and fodder grass	..	..	1,112	..	..	1,112
	Other produce.	QRS.					
	Grass (hay, thatch, korai, etc.)	..	..	1	..	..	1
	Miscellaneous including, tree-tapping and tree-owner's fees.	..	..	26	..	..	26
	Total, minor produce	..	..	27	..	..	27
	Total, Reserved lands	..	2	1,209	..	..	1,211
	Unreserved lands.	NO.					
	Bamboos	6,615	64	32,930	121	..	33,115
	Grazing and fodder grass	..	..	9,466	..	..	9,466
	Other produce.	QRS.					
	Grass (tharbi, koraj, etc.).	5,612	21	499	..	..	520
	Tamarind, soapnuts, galnuts, nux-vomica, shekoi, etc.	358	361	22,776	..	..	23,137
	Horns, honey, wax, resin, skins, etc.	..	..	496	..	..	496
	Tangedu, etc., barks and fibres.	..	..	1,196	..	..	1,196
	Stone, gravel, earth, etc.	337,204	459	1,280	..	..	1,739
	Leaves for platters	..	..	380	..	..	380
	Date and palmyra leaves, stalks, etc.	..	..	30	64	..	94
	Manure leaves and thorns	400	1	6	..	..	7
	Miscellaneous, including tree-tapping and tree-owners' fees.	196	7	24,164	..	..	24,171
	Total, minor produce	343,770	849	50,827	64	..	51,740
	Total, Unreserved lands	..	913	93,223	185	..	94,321
	Abstract for the circle.						
	Bamboos in number	30,546	620	85,390	351	..	86,361
	Grazing and fodder grass	..	..	52,232	11,781	592	64,605
	Other produce in quarters	383,307	972	72,613	64	500	74,149
	Grand total, First Circle	..	1,592	2,10,235	12,196	1,092	2,25,115

Outturn of minor forest produce during the year 1921-22—*cont.*

Circle.	Description of produce.	Produce removed or utilized					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value.	Value.	Value.	Value.
		NO.	RS.	RS.	RS.	RS.	RS.
Second Circle ..	Bamboos	639,612	12,181	34,662	163	..	47,006
		QRS.					
	Grazing and fodder grass ..	..	..	2,09,989	..	5,067	2,15,056
	Grass (hay, thatch and grass) ..	..	..	1,840	30	..	1,870
	Tamarind, soapnuts and nux-vomica.	1,610	1,894	15,295	..	..	17,189
	Stone, gravel and earth ..	..	..	2,045	..	..	2,045
	Date, palmyra and platter leaves.	1,023	282	617	3,659	..	4,558
	Manure leaves and thorns ..	..	..	2,382	..	..	2,382
	Thummari leaves	..	..	420	..	..	420
	Honey, wax, resin, gum, and galnuts.	..	..	532	..	..	532
	Tangedu bark, fibre and seeds ..	26	3	90,310	..	..	90,313
	Miscellaneous, including tree-tapping fees and amaroi.	9,728	8,033	80,674	..	..	88,707
	Total ..	12,387	10,212	1,94,115	3,689	..	2,08,016
		NO.					
Third Circle ..	Bamboos	14,296	133	27,859	392	..	28,384
		QRS.					
	Grazing and fodder grass ..	..	..	2,09,912	174	86	2,10,172
		QRS.					
	Grass (thatch, korai, etc.) ..	2,451	225	527	10	..	762
	Honey, wax, etc..	..	..	..	..	..	..
	Tangedu, etc., barks	50	263	26,200	..	..	26,463
	Date, palmyra and leaves ..	..	..	2,246	652	..	2,898
	Stones, gravel and earth ..	..	..	6,308	108	..	6,416
	Manure leaves, tooki and plate leaves, etc.	..	..	14,899	..	..	14,899
	Tamarind, soapnuts and nux-vomica.	11,558	63,264	35,300	..	..	98,564
	Other miscellaneous produce, including tree-owners' fees.	2,272	4,518	59,200	..	..	63,718
	Total ..	16,331	68,270	1,44,680	770	..	2,13,720
		NO.					
	Total of grass and grazing and minor produce.	16,331	68,270	3,54,592	944	86	4,23,892
		NO.					
Fourth Circle ..	Bamboos	1,645	588	1,03,076	24	..	1,03,688
	Grass and grazing	..	..	1,67,929	95	..	1,68,024
		QRS.					
	Grass (thatch, korai, etc.) ..	15	19	2,919	..	..	2,938
	Tamarind, soapnuts, galnuts, nux-vomica, etc.	..	..	23,165	..	..	23,165
	Avaram, vembadam, barks ..	..	..	25,995	..	..	25,995
	Stone, gravel earth, etc. ..	..	..	7,042	..	..	7,042
	Manure leaves, etc.	..	..	30,090	..	..	30,090
	Date, palmyra, etc , leaves ..	..	..	1,416	11	..	1,427
	Honey, wax, etc.	..	..	50	..	..	50
	Miscellaneous, including tree-owners' fees.	1,066	551	52,360	..	..	52,911
	Total ..	1,081	570	1,43,037	11	..	1,43,618
	Grand total ..	..	1,158	4,14,042	130	..	4,15,330
	Reserved forests.	NO.					
Fifth Circle ..	Bamboos	11,979	641	37,343	..	..	37,984
	Grazing and fodder grass ..	..	..	1,17,189	..	1,502	1,18,691

Outturn of minor forest produce during the year 1921-22—*cont.*

Circle.	Description of produce.	Produce removed or utilized					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value.	Value.	Value.	Value.
	Other produce.	QRS.	RS.	RS.	RS.	RS.	RS.
	Grass (thatch, korai, etc.) ..	2,400	..	5,676	..	..	5,676
	Dammer, turmeric, pepper, cardamoms, etc.	..	..	14,869	..	..	14,869
	Tamarind, soapnuts, galnuts, nux-vomica, shekoi, etc.	..	..	18,548	..	..	18,548
	Horns, honey, wax, gum, resin, skin, etc..	162	535	7,755	..	..	8,290
	Avaram, vembadam, etc., barks and fibres.	..	..	19,185	..	..	19,185
	Stones, earth, gravel, etc. ..	..	..	813	..	..	813
	Manure leaves, thorns, etc. ..	..	..	2,923	..	..	2,923
	Date and palmyra leaves ..	..	..	5,270	..	859	6,129
	Miscellaneous	..	..	10,477	..	..	10,477
	Total ..	2,562	535	85,516	..	859	86,910
Fifth Circle—*cont.*	*Unreserved lands.*						
	Other produce.						
	Miscellaneous	..	..	4,560	..	..	4,560
	Gravel, stones, earth, etc. ..	..	..	1,559	161	..	1,720
	Date and palmyra leaves ..	..	..	2	..	..	2
	Total ..	..	..	6,121	161	..	6,282
	Abstract for the Fifth Circle.						
	Bamboos	NO. 11,979	641	37,343	..	..	37,984
	Grazing and fodder grass ..	QRS. ..	..	1,17,189	..	1,502	1,18,691
	Other produce	2,562	535	91,637	161	859	93,192
	Grand total ..	..	1,176	2,46,169	161	2,361	2,49,867
	Reserved forests.	NO.					
	Bamboos	2,011	607	16,968	2	..	17,577
	Grazing and fodder grass ..	..	.	33,358	120	..	33,478
	Other produce.	QRS.					
	Elephant tusks	5	1,009	..	..	..	1,009
	Grass (thatch, etc.) ..	..	..	105	5	..	110
	Blue gum leaves, seeds, etc. ..	106	484	50	..	..	534
	Manure leaves	..	..	348	..	..	348
	Avaram bark	..	..	550	..	..	550
	Stone, gravel, etc.	..	..	791	4	..	795
	Tree-owners' fees		..	12	..		12
	Cardamoms, pepper, etc., rents.	..	..	1,141	..	..	1,141
	Miscellaneous	..	..	10,245	..	..	10,245
Sixth Circle ..	Total ..	111	1,493	13,242	9	..	14,744
	Reserved lands.						
	Bamboos and reeds	..	..	53	..	..	53
	Grazing and fodder grass ..	..	..	465	691	..	1,156
	Other produce.						
	Honey, wax, etc.	216	540	..	..	..	540
	Unreserved lands.	NO.					
	Bamboos	..	..	265	2	..	267

Outturn of minor forest produce during the year 1921-22—*cont.*

Circle.	Description of produce.	Produce removed or utilized.					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value	Value.	Value.	Value.
	Other produce.	QRS.	RS.	RS.	RS.	RS.	RS.
Sixth Circle—*cont.*	Nux-vomica, pindicai, etc., seeds.	218	240	4,140	..	..	4,380
	Manure leaves	..	..	14	..	..	14
	Barks, etc.	..	..	219	..	..	219
	Stone and gravel	..	..	482	..	..	482
	Tree-owners' fees	..	..	579	..	..	579
	Miscellaneous	..	..	9,551	..	..	9,551
	Total ..	218	240	14,985	..	..	15,225
	Abstract for the Sixth Circle.						
	Bamboos	NO. 2,011	607	17,286	4	..	17,897
	Grazing and fodder grass ..	..	..	33,823	811	..	34,634
	Other produce	QRS. 545	2,273	28,227	9	..	30,509
	Grand total ..	..	2,880	79,336	824	..	83,040
Total, Presidency ..	Bamboos	700,089	14,770	305,616	934	..	3,21,320
	Grazing and fodder grass ..	..	..	7,91,074	12,861	7,247	8,11,182
	Other produce	416,213	82,832	6,74,309	4,704	1,359	7,63,204
	Grand total, Presidency ..	..	97,602	17,70,999	18,499	8,606	18,95,706

NOTE:—This excludes Nilambur division as figures are not available.

ANNUAL FORM No. 78.

Forest Department, Madras Presidency.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1921–22.

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
TIMBER (IN THOUSANDS OF CUBIC FEET).					
First Circle.					
Ganjām	319	196	515	112 (*a*) 35 (*b*) 3	365
Vizagapatam	..	2	2	(*a*) 1	1
Gōdavari, Upper	59	36	95	47 (*a*) 4	44
Do. Lower	1	6	7	(*a*) 6	1
Total	379	240	619	208	411
Second Circle.					
Bellary	..	..	..	..	..
Anantapur	..	..	..	..	..
Guntūr	..	1	1	1	..
Kurnool, East	5	9	14	12	2
Do. South	4	6	10	8	2
Do. West	28	98	126	53	73
Total	37	114	151	74	77
Third Circle.					
Cuddapah, North	..	1	1	1	..
Do. South	..	5	5	5	..
Do. West	1	1	2	1	1
Nellore	..	1	1	1	..
Chingleput	..	..	..	..	..
Chittoor	1	1	2	1	1
Vellore, North	..	..	..	..	..
Total	2	9	11	9	2
Fourth Circle.					
Vellore, South	2	3	5	4	1
Do. West	3	3	6	5	1
Salem, East	..	1	1	1	..
Do. North	2	6	8	6	2
Do. Central	..	..	..	..	..
Do. South	1	1	2	1	1
Total	8	14	22	17	5
Fifth Circle.					
Kollegal	1	3	4	1 (*c*) 1	2
Coimbatore, North	4	(*c*) 9 1	14	11 (*b*) 1	2
Do. South	120	153	273	148 (*b*) 27 (*a*) 2	96
Madura	3	4	7	6	1
Tinnevelly	1	..	1	1	..
Total	129	170	299	198	101
Sixth Circle.					
Mangalore, North	6	25	31	28 (*a*) 1 (*b*) 1	1
Do. South	82	23	105	19 (*a*) 1	85
Wynaad	4	82	86	16 (*a*) 3	67
Nilambūr	480	..	480	..	..
The Nilgiris	(*d*) 34	54	88	81 (*a*) 1	6
Palghat	56	103	159	81	78
Total	662	287	949	232	237
Grand total, Presidency	1,217	834	2,051	738	833

(*a*) Used departmentally. (*b*) Written off the accounts.
(*c*) Transferred from Kollegal to North Coimbatore. (*d*) Revised figures furnished by the District Forest Officer.
* Details not available owing to destruction of records during the rebellion.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1921–22—*cont.*

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
FUEL (IN THOUSANDS OF CUBIC FEET).					
First Circle.					
Ganjām	32	137	169	100 (*a*) 45 (*b*) 17	7
Vizagapatam	5	4	9	5	4
Gōdāvari, Upper	9	5	14	8 (*a*) 1	5
Do. Lower	2	25	27	24	3
Kistna	..	11	11	11	..
Total ..	48	182	230	211	19
Second Circle.					
Bellary	..	16	16	16	..
Anantapur	..	..	..	..	..
Guntūr	12	5	17	17	..
Kurnool, East	67	64	131	57	74
Do. South	..	..	..	..	..
Do. West	1,102	1,863	2,965	343	2,622
Total ..	1,181	1,948	3,129	433	2,696
Third Circle.					
Cuddapah, North	..	..	..	..	..
Do. South	2	73	75	71	4
Do. West	1	2	3	3	..
Nellore	26	20	46	45	1
Chingleput	..	1	1	1	..
Chittoor	2	54	56	54	2
Vellore, North	1	2	3	3	..
Total ..	32	152	184	177	7
Fourth Circle.					
Vellore, South	..	1	1	1	..
Do. West	..	1	1	1	..
Salem, East	..	..	..	..	..
Do. North	..	1	1	1	..
Do. Central	..	..	..	..	..
Do. South	3	8	11	6	5
Total ..	3	11	14	9	5
Fifth Circle.					
Kollegal	..	..	..	..	..
North Coimbatore	..	..	..	..	..
Madura	1	3	4	3	1
Tinnevelly	1	3	4	4	..
Total ..	2	6	8	7	1
Sixth Circle.					
Mangalore, North	1	64	65	58	7
Do. South	107	136	243	184 (*b*) 8	51
Wynaad	..	..	..	..	..
Nilambūr	1	..	1	..	..
The Nilgiris	225	390	615	371 (*a*) 3 (*b*) 10	231
Palghat	5	70	75	73	2
Total ..	339	660	999	707	301
Grand total, Presidency ..	1,605	2,959	4,564	1,544	3,021

(*a*) Used departmentally. (*b*) Written off the accounts.

* Details not available owing to destruction of records during the rebellion.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1921-22—*cont.*

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
BAMBOOS (IN NUMBER).					
First Circle.					
Ganjam	..	5,820	5,820	(a) 5,820	..
Vizagapatam	100	2,435	2,535	161 (a) 2,374	..
Godāvari, Upper	..	9,261	9,261	(a) 9,261	..
Do. Lower	700	13,030	13,730	500 (a) 11,380	1,850
Total ..	800	30,546	31,346	29,496	1,850
Second Circle.					
Bellary	..	..	..	..	..
Anantapur	..	..	..	..	..
Guntūr	..	163	163	163	..
Kurnool, East	19,366	130,839	150,205	120,346	29,859
Do. South	..	398	338	398	..
Do. West	45,500	508,212	553,712	512,764	40,948
Total ..	64,866	639,612	704,418	633,671	70,807
Third Circle.					
Cuddapah, North	..	4,714	4,714	3,519	1,195
Do. South	..	4,830	4,830	3,830	1,000
Do. West	..	2,690	2,690	2,440	250
Nellore	..	..	..	..	..
Chingleput	..	..	..	..	..
Chittoor	620	2,046	2,666	2,526	140
Vellore, North	..	16	16	16	..
Total ..	620	14,296	14,916	12,331	2,585
Fourth Circle.					
Vellore, South	..	..	..	..	..
Do. West	..	..	..	..	..
Salem, East	..	51	51	51	..
Do. North	5	960	965	860	105
Do. Central	..	..	..	..	..
Do. South	..	634	634	634	..
Total ..	5	1,645	1,650	1,545	105
Fifth Circle.					
Kollegal	..	505	505	505	..
North Coimbatore	332	11,474	11,806	7,320 (a) 4,420	66
Total ..	332	11,979	12,311	12,245	66
Sixth Circle.					
Mangalore, North	..	151	151	(a) 151	..
Do. South	4,754 (c)— 255	280	4,779	321 (a) 450 (b) 2,431	1,677
Wynaad	..	250	250	250	..
Nilambur	419,706	..	419,706	..	..
The Nilgiris	..	..	..	..	..
Palghat	437	1,330	1,767	1,654	113
Total ..	424,642	2,011	426,653	5,257	1,690
Grand total, Presidency ..	491,265	700,089	1,191,354	694,545	77,103

(a) Used departmentally. (b) Written off the accounts.
(c) Revised figures furnished by the District Forest Officer.
* Details not available owing to destruction of records during the rebellion.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1921–22—*cont.*

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
MINOR FOREST PRODUCE (IN QUARTERS OF 28 LB.).					
First Circle.					
Ganjām	..	371,842	371,842	(a) 371,842	..
Vizagapatam	92	1,232	1,324	204 (b) 26	1,094
Godāvari, Upper	286	9,370	9,656	29 (a) 8,209	1,418
Do. Lower	4,335	835	5,170	124 (a) 2,130	2,916
Kistna	4	28	32	(a) 31	1
Total	4,717	383,307	388,024	382,595	5,429
Second Circle.					
Bellary	(c) 1,600,016	..	1,600,016	8	1,600,008
Anantapur	(d) 12	62	74	64	10
Guntūr	4	26	30	15	15
Kurnool, East	5,017	10,689	15,706	14,572	1,134
Do. South	102	..	102	102	..
Do. West	641	1,610	2,251	1,354	897
Total	1,605,792	12,387	1,618,179	16,115	1,602,064
Third Circle.					
Cuddapah, North	2	..	2	2	..
Do. South	129	1,734	1,863	1,503	360
Do. West	5	804	809	805	4
Nellore	2,227	12,883	15,110	13,622	1,488
Chingleput	..	..	..	..	..
Chittoor	227	67	294	216	78
Vellore, North	325	843	1,168	904	264
Total	2,915	16,331	19,246	17,052	2,194
Fourth Circle.					
Vellore, South	185	274	459	242	217
Do. West	228	612	840	394	446
Salem, East	148	48	196	196	* ..
Do. North	72	112	184	120	64
Do. Central	37	14	51	40	11
Do. South	3,743	21	3,764	3,741	23
Total	4,413	1,081	5,494	4,733	761
Fifth Circle.					
Kollegal	87	49 (e) 31	167	10 (b) 3 (a) 123	31
North Coimbatore	190	2,400	2,590	2,559 (e) 31	..
South Coimbatore	(f) ..	1 (g) 2	3	2	1
Madura	18	112	130	126	4
Tinnevelly	..	(h) ..	(h) ..	(h) ..	(h) ..
Total	295	2,595	2,890	2,854	36
Sixth Circle.					
Mangalore, North	1	..	1	..	1
Do. South	9,463	218	9,681	9,678	3
Wynaad	..	4	4	..	4
Nilambur	..	..	..	..	* ..
The Nilgiris	41	322	363	154 (a) 118 (b) 28	63
Palghat	4	1	5	5	..
Total	9,509	545	10,054	9,983	71
Grand total, Presidency	1,627,641	416,246	2,043,887	433,332	1,610,555

(a) Used departmentally. (b) Written off the accounts.
(c) Revised figure. The quantity given in the last review is incorrect.
(d) Revised figures furnished by the District Forest Officer owing to the correct conversion into quarters.
(e) Transferred from North Coimbatore to Kollegal. (f) Less than one quarter.
(g) Received from Palghat and the Nilgiris.
(h) Represents seeds of different seeds; their weight in quarters of 28 lbs. is not given by the District Forest Officer.

* Details not available owing to destruction of records during the rebellion.

ANNUAL FORM No. 79.

Forest Department, Madras Presidency.

Statement showing the value of timber and other produce at sale depots for the year 1921-22.

District.	Description of timber or produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.	
		Number.	Cubic feet.	Value	Number.	Cubic feet.	Value.	In favour of the year.	Against the year.
	First Circle.			RS.			RS.	RS.	RS.
Ganjam ..	Timber	..	3,700	7,821	..	198	141	..	7,680
	Second Circle.								
Bellary ..	Timber	..	..	..	..	..	..	..	..
	Fuel	..	..	..	..	..	..	..	..
	Minor produce ..	..	..	..	..	..	..	..	..
Anantapur ..	....	..	..	..	..	..	..	..	..
Guntur ..	....	..	..	..	..	..	..	..	..
Kurnool, East.	....	..	..	..	..	..	..	..	..
Kurnool, South.	Timber	..	3,682	921	..	2,116	1,058	137	..
	Fuel	..	..	..	..	..	..	..	..
	Minor forest produce.	..	..	..	..	..	..	..	..
Kurnool, West.	....	..	..	..	..	..	..	..	..
	Third Circle.								
Nellore ..	Timber	..	110	27	..	..	..	..	27
	Fuel	..	26,007	1,625	..	1,270	79	..	1,546
	Minor forest produce.	QRS. ..	2,227	16,591	QRS. 1,488	..	4,482	..	11,609
Vellore, North.	Timber	..	..	..	..	..	..	..	..
	Fuel	..	530	32	..	..	..	..	32
	Minor forest produce.	QRS. ..	325	400	QRS. 264	..	490	90	..
	Fourth Circle.								
Vellore, South.	Timber	..	891	36,286	..	..	..	..	36,286
Vellore, West.	Timber	..	1,325	45,528	..	..	..	..	45,528
Salem, East ..	Timber	..	..	..	..	16	561	561	..
Salem, North.	Timber .. .	..	1,982	24,576	..	2,120	26,286	1,710	..
	Bamboos ..	NO. 5	..	2	NO. 105	..	3	1	..
	Minor forest produce.	QRS. 72	..	77	QRS. 63	..	115	38	..
Salem, Central.	Timber	..	1	24	..		31	7	..
Salem, South.	Timber	..	430	755	..	270	482	..	273
Total value.	....	..	..	1,07,248	..	..	27,478	..	79,770
	Fifth Circle.								
Coimbatore, North.	Timber	..	3,630	87,757	..	1,825	24,808	..	62,949
	Fuel	..	440	27	..	..	..	..	27
	Bamboos	332	..	3	66	..	1	..	2
	Minor produce ..	QRS. 190	..	28	..	..	..	..	28
Coimbatore, South.	Timber	..	10,728	14,708	..	38,384	56,785	42,077	..
	Minor produce ..	*	..	35	QR. 1	..	214	179	..

* Less than a quarter.

Forest Department, Madras Presidency—cont.

Statement showing the value of timber and other produce at sale depots for the year 1921-22—*cont.*

District.	Description of timber or produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.	
		Number.	Cubic feet.	Value.	Number.	Cubic feet.	Value.	In favour of the year.	Against the year.
	Fifth Circle—cont.			Rs.			Rs.	Rs.	Rs.
Madura ..	Timber	..	3,009	892	..	1,226	418	..	474
	Fuel	..	1,400	88	..	1,260	79	..	9
	Minor produce ..	QRS. 18	..	6	QRS. 3	..	2	..	4
Tinnevelly ..	Timber	..	624	136	..	(a) 248	41	..	95
	Fuel	..	1,063	41	..	191	19	..	22
	Minor produce ..	QRS. 1	..	19	(b)	..	2	..	17
	Sixth Circle.								
Mangalore, North.	Timber	..	4,646	2,904	..	10	191	..	2,713
Mangalore, South.	Timber	..	4,816	4,816	..	37,364	32,568	27,752	..
	Fuel	..	396	59	..	..	..	..	59
Wynaad ..	Timber	..	95	142	..	..	..	..	142
Nilambur	Timber	..	88,718	180,408	..	11,978	15,745	..	1,64,663
	Fuel	..	442	88	..	1,694	268	180	..
	Bamboos	53,263	..	2,125	2,308	..	50	..	2,075
The Nilgiris.	Timber	..	13,663	21,800	..	6,000	6,000	..	15,800
	Fuel	..	6,340	817	..	35,000	5,584	4,767	..
	Minor produce ..	QRS. 41	..	400	QRS. 63	..	620	220	..
Palghat ..	....	..	..	..	..	..	..	..	..
	Total value ..	..	..	2,13,559	..	..	61,026	..	1,52,533
	Abstract.								
First Circle.	Timber	..	2,933	4,889	..	3,700	7,821	2,932	..
Second Circle.	Timber	..	3,682	921	..	2,116	1,058	137	..
	Fuel	..	..	..	..	..	..	..	..
	Minor produce ..	..	..	..	..	..	..	..	..
	Total value ..	..	3,682	921	..	2,116	1,058	137	..
Third Circle.	Timber	..	110	27	..	..	..	..	27
	Fuel	..	26,637	1,657	..	1,270	79	..	1,578
	Minor produce ..	FOUR MDS. 2,552	..	16,991	MDS. 1,488	..	5,472	..	11,519
	Total value ..	..	..	18,675	..	..	5,551	..	13,124
Fourth Circle.	Timber	..	2,349	38,767	..	4,629	1,07,169	68,402	..
	Bamboos	102	..	51	5	..	2	..	49
	Minor forest produce.	QRS. 952	..	447	72	..	77	..	370
	Total value ..	..	..	39,265	..	..	1,07,248	67,983	..
Fifth Circle.	Timber	..	17,991	1,03,493	..	41,680	82,052	..	21,441
	Fuel	..	2,903	156	..	1,451	98	..	58
	Bamboos	332	..	3	66	..	1	..	2
	Minor produce ..	QRS. 209	..	88	QRS. 4	..	218	130	..
	Total value ..	..	..	1,03,740	..	..	82,369	..	21,371
Sixth Circle.	Timber	..	111,938	2,10,070	..	55,352	54,504	..	1,55,566
	Fuel	..	7,178	964	..	36,694	5,852	4,888	..
	Bamboos	53,263	..	2,125	2,308	..	50	..	2,075
	Minor produce ..	QRS. 41	..	400	QRS. 63	..	620	220	..
	Total value ..	..	..	2,13,559	..	..	61,026	..	1,52,533
	Grand total, Presidency.	..	..	3,81,049	..	..	2,65,073	..	1,15,976

(a) Excludes sandalwood valued Rs. 55.
(b) Represents seeds of different species; weight in quarters of 28 lb. is not given by the District Forest Officer.

Forest Department,

Summary of revenue of the different districts

Budget heads.	First Circle.							Second		
	Direction.	Ganjam.	Vizagapatam.	Godavari, Upper.	Godavari, Lower.	Kistna.	Total.	Direction.	Bellary.	Anantapur.
Receipts.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
I. Timber and other produce removed from the forests by Government Agency—										
(a) Timber	1	9,385	686	23,778	63	..	33,913	..	..	..
(b) Firewood and charcoal	..	2,337	78	461	877	140	3,893	..	117	2
(c) Bamboos	..	..	..	..	16	..	16	..	..	..
(d) Sandalwood	..	..	..	..	..	..	..	..	..	..
(e) Grass and other minor produce.	76	..	88	152	24	..	340	..	3	88
II. Timber and other produce removed from the forests by consumers or purchasers—										
(a) Timber	..	4,763	2,410	3,083	24,048	2,184	36,488	..	6,463	15,818
(b) Firewood and charcoal	12	28,931	8,491	421	49,457	11,933	99,245	..	9,589	4,621
(c) Bamboos	..	4,928	14,611	8,120	53,421	5,785	86,865	..	67	325
(d) Grazing and fodder grass	..	8,669	4,995	6,257	18,533	13,758	52,212	..	32,908	43,941
(e) Other produce	1,249	1,909	13,715	906	27,111	7,922	52,803	..	21,473	81,164
(f) Rents for trees tapped	..	977	1,042	4	6,987	13,917	22,927	..	20,455	11,781
(g) Other items	..	..	..	..	..	..	..	..	..	..
(h) Commutation	..	..	..	..	..	..	..	..	..	..
III. Confiscated drift and waif-wood	..	175	65	1,337	2,657	98	4,332	..	239	397
IV. Revenue from forest not managed by Government—										
(a) Revenue from shared and private forests.	..	..	..	..	..	..	..	..	..	..
V. Miscellaneous—										
(a) Fines and forfeitures	..	3,884	2,713	678	5,046	7,071	19,392	..	5,893	10,673
(b) Other sources	12	3,117	467	771	6,739	1,750	12,856	15	903	1,227
Total	1,350	69,066	49,361	45,968	1,94,979	64,558	4,25,282	15	98,110	1,70,037
Deduct 'Refunds'—Voted	..	560	24	..	5,287	4,359	10,230	..	1,096	158
Total, Receipts	1,350	68,506	49,337	45,968	1,89,692	60,199	4,15,052	15	97,014	1,69,879

Budget heads.	Fourth Circle.									
	Direction.	Forest Engineer.	Vellore, South.	Vellore, West.	Salem, East.	Salem, North.	Salem, Central.	Salem, South.	Total.	Direction.
Receipts.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
I. Timber and other produce removed from the forests by Government Agency—										
(a) Timber	..	..	..	158	..	612	..	116	886	..
(b) Firewood and charcoal	..	..	122	6	25	70	..	126	349	..
(c) Bamboos	..	..	..	..	..	168	..	..	168	..
(d) Sandalwood	(a) 2,290	..	98,197	86,134	19,675	1,46,133	10,161	11,591	3,74,181	*2,15,921
(e) Grass and other minor produce.	..	..	4	2	..	2	..	..	8	..
II. Timber and other produce removed from the forests by consumers or purchasers—										
(a) Timber	..	..	13,296	2,799	20,746	3,229	11,369	22,857	74,296	..
(b) Firewood and charcoal	..	..	11,878	3,911	35,902	2,681	12,202	31,726	98,300	..
(c) Bamboos	..	..	30,524	12,281	18,880	7,137	22,520	7,605	98,947	..
(d) Grazing and fodder grass	..	..	27,033	30,489	37,750	17,863	29,152	25,882	1,68,169	..
(e) Other produce	..	..	18,608	10,880	28,163	11,056	17,701	51,331	1,37,739	..
(f) Rents for trees tapped	..	..	3,826	507	1,016	994	66	19	6,428	..
(g) Other items	..	..	..	..	37	455	..	..	492	..
(h) Commutation	..	..	..	..	..	..	1,148	..	1,148	..
III. Confiscated drift and waif-wood	..	..	245	497	273	32	260	889	2,196	..
IV. Revenue from forest not managed by Government—										
(a) Revenue from shared and private forests.	..	..	..	..	..	..	..	..	..	..
V. Miscellaneous—										
(a) Fines and forfeitures	..	..	20,530	8,814	14,868	2,683	6,136	20,195	73,226	..
(b) Other sources	(b) 16	67	764	789	3,907	1,209	7,667	1,144	7,749	86
Total	2,306	67	2,25,027	1,57,267	1,73,428	1,94,324	1,18,382	1,73,481	10,44,282	2,16,007
Deduct 'Refunds'—Voted	..	..	4,718	2,510	591	141	676	1,328	9,964	..
Total, Receipts	2,306	67	2,20,309	1,54,757	1,72,837	1,94,183	1,17,706	1,72,153	10,34,318	2,16,007

Note for the I Circle—
The revenue under direction is distributed as follows:—
I-E. Godavari upper Rs. 5 and Godavari Lower Rs. 71.
II-E. ,, lower Rs. 1,160, direction Rs. 89.
VI Ganjam Rs. 12.

The revenue under direction is distributed as follows:—
(a) South Cuddapah 442, Chittoor 435 and Tinnevelly 1,413.
(b) South Malabar 16.
* Rupees 1,81,087 relates to North Coimbatore and the balance to Kollegal.

FORM No. 80.

Madras Presidency.

for the year 1921–22.

Circle.					Third Circle.								
Guntur.	Kurnool, East.	Kurnool, South.	Kurnool, West.	Total.	Direction.	Cuddapah, North.	Cuddapah, South.	Cuddapah, West.	Nellore.	Chingleput.	Chittoor.	Vellore, North.	Total.
Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
34	5,500	620	9,597	15,751	..	39	2,303	130	49	7	25	86	2,639
108	473	13	3,452	4,165	..	86	290	10	1,485	52	1,532	115	3,570
..	2,424	..	9,689	12,113	..	..	..	..	..	..	10	4	14
..	..	..	..	..	..	..	..	..	..	..	17	..	17
..	8,230	5	1,578	9,904	..	..	..	..	67,591	10	4	626	68,231
3,305	1,786	8,067	6,356	41,795	..	1,606	4,167	9,179	8,062	4,719	19,252	15,703	62,688
17,885	343	10,627	3,270	46,335	..	8,009	4,653	8,368	50,527	14,793	11,157	17,106	1,14,613
..	874	33,396	..	34,662	..	4,716	2,350	2,409	..	502	6,156	8,305	24,438
53,336	35,738	10,399	33,105	2,99,427	..	15,337	6,249	19,489	74,450	25,562	40,342	27,482	2,08,911
16,954	4,825	7,462	29,747	1,61,625	..	6,823	8,525	17,386	10,393	8,855	37,481	28,508	1,17,971
4,424	752	1,520	4,720	43,652	..	444	1,121	2,600	6,403	3,933	4,597	5,678	24,776
..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..
168	269	2,167	1,022	4,262	..	314	413	610	372	294	121	144	2,268
..	..	..	..	..	..	..	..	..	..	..	..	..	..
10,096	2,318	6,631	4,433	40,044	..	3,587	4,585	9,425	17,605	4,673	14,427	19,998	74,300
1,946	1,913	1,925	2,918	10,847	..	584	666	1,217	2,086	615	941	1,171	7,280
1,08,256	65,445	82,832	1,09,887	6,34,582	..	41,545	35,322	70,823	2,39,023	64,015	1,36,062	1,24,926	7,11,716
1,172	106	208	241	2,981	..	384	158	628	3,353	60	5,828	337	10,748
1,07,084	65,339	82,624	1,09,646	6,31,601	..	41,161	35,164	70,195	2,35,670	63,955	1,30,234	1,24,589	7,00,968

Fifth Circle.							Sixth Circle.							
Kollegal.	North Coimbatore.	South Coimbatore.	Madura.	Tinnevelly.	Forest Engineer.	Total.	Directions.	North Mangalore.	South Mangalore.	Wynaad.	Nilambur.	Palghat.	The Nilgiris.	Forest Research Office.	Total.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
6	400	* 2,28,847	1,796	52	..	2,31,101	..	13,755	17,149	95,209	2,63,722	65,038	35,900	..	4,90,773
..	16	..	359	462	..	837	..	1,091	6,576	..	46	3,722	33,137	13	44,585
..	..	..	..	..	..	..	..	..	5	146	5,296	436	..	..	5,883
..	32,510	..	..	† ..	..	2,48,431	..	5,606	2,874	..	..	..	3,422	..	11,902
232	13	..	87	..	..	332	..	..	6	30	5	879	894	..	1,814
1,597	8,520	8,339	15,844	1,537	..	35,837	..	22,510	8,583	23,844	5,074	10,319	559	..	70,889
2,819	27,813	14,933	82,481	1,43,354	..	2,71,400	..	34,181	1,419	731	7	31,207	6,816	..	74,361
3,818	19,627	7,796	5,165	1,569	..	37,975	..	991	2,299	468	3	12,533	845	..	17,139
34,711	48,255	4,265	20,525	9,433	..	1,17,189	..	5,420	6,494	4,575	..	8,321	9,013	..	33,823
5,416	9,561	6,788	36,662	34,105	..	92,532	..	6,180	7,225	3,147	1,028	9,162	1,364	..	28,106
35	17	..	..	..	..	52	..	361	230	..	..	..	..	..	591
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
72	220	109	2,741	442	..	3,584	..	396	294	99	446	144	9	..	1,388
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5,413	9,935	5,366	12,271	10,314	..	43,299	..	4,533	4,396	1,001	1,823	5,526	10,365	..	27,644
5,433	3,809	73,988	9,028	2,851	203	95,398	18	1,220	3,170	5,743	4,563	9,512	7,622	13	31,861
59,552	1,60,696	3,50,431	1,86,959	2,04,119	203	11,77,967	18	96,244	60,720	1,34,993	2,82,013	1,56,799	1,09,946	26	8,40,759
306	1,313	130	563	115	33	2,460	..	42	235	20	..	672	336	..	1,305
59,246	1,59,383	3,50,301	1,86,396	2,04,004	170	11,75,507	18	96,202	60,485	1,34,973	2,82,013	1,56,127	1,09,610	26	8,39,454

* Excludes Rs. 2,850 credited in the Nilgiri district accounts.

† Excludes Rs. 1,413 credited in the South Vellore accounts.

The revenue for Fifth Circle including the amounts credited in Nilgiris and South Vellore districts comes to Rs. 11,79,767.

Summary of expenditure of the different districts for the Forest year 1921-22.

Head of account.	First Circle.							Second		
	Direction.	Ganjam.	Vizagapatam.	Godavari, Upper.	Godavari, Lower.	Kistna.	Total.	Direction.	Bellary.	Anantapur.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
A. Conservancy and Works.										
I. Timber and other produce removed from the forests by Government Agency—										
(a) Timber	..	51,785	124	2,460	..	..	54,369	..	..	..
(b) Firewood and charcoal	..	2	..	109	72	..	183	..	..	4
(c) Bamboos	..	..	..	..	6	..	6	..	..	..
(d) Sandalwood	..	..	..	..	..	..	..	..	..	..
(e) Grass and other minor produce.	..	..	27	300	35	..	362	— 10	..	43
II. Timber and other produce removed from the forests by consumers or purchasers.	..	5,883	5,459	3,248	15,812	1,259	31,656	..	2,193	2,173
III. Confiscated drift and waifwood	..	104	..	476	1,101	3	1,684	..	..	13
IV. Forests not managed by Government—										
(a) Shared and private forests.	..	..	..	..	..	..	..	..	..	..
V. Rent of leased forests and payments to shareholders in forests managed by Government.	..	..	478	..	..	..	478	..	..	..
VI. Live-stock, stores, tools and plant—										
(a) Purchase of cattle	..	50	..	..	..	..	50	..	..	..
(b) Feed and keep of cattle	..	..	..	2,024	..	..	2,024	..	..	..
(c) Stores, tools and plant	—7,807	2,37,292	212	1,576	6,002	3,115	2,40,390	8,330	156	382
VII. Communications and buildings—										
(a) Roads and bridges	..	14,094	886	2,710	1,920	495	20,105	..	..	245
(b) Buildings	..	63,541	2,891	6,230	4,175	1,689	78,526	..	3,574	3,940
(c) Other works	..	600	20	79	246	49	994	..	20	..
VIII. Demarcation, improvement and extension of forests—										
(a) Demarcation	..	208	..	1,298	122	212	1,840	..	3,060	481
(b) Cost of forest settlement, compensation for land and rights.	..	786	3	..	..	..	789	..	..	..
(c) Surveys—										
(1) Local	..	— 1	837	1,921	1,306	1,116	5,179	..	105	..
(2) India	..	..	..	..	..	..	..	..	..	..
(d) Working-plans	502	1,516	..	..	..	..	2,018	..	..	..
(e) Sowing and planting	192	402	6	430	271	381	1,682	..	..	231
(f) Protection from fire	..	6,180	1,488	5,387	5,837	1,184	20,076	..	1,292	561
(g) Other works	..	4,853	..	1,749	45	4,371	11,018	..	1,234	3,962
IX. Miscellaneous—										
Non-voted—										
(a) Rates and taxes	..	..	1	..	156	39	196	..	..	..
Voted—										
(b) Law charges	..	..	28	..	..	..	28	..	7	..
(c) Other charges	..	629	56	12	561	3	1,261	..	..	170
Total, A. Conservancy and Works	—7,113	3,87,924	12,516	30,004	37,667	13,916	4,74,914	3,320	11,641	12,205
B. Establishments.										
I. Salaries—										
Non-voted—										
(a) Conservators	18,718	..	..	..	395	..	19,113	13,400	..	..
(b) Superior officers appointed by the Secretary of State.	—3,362	24,006	..	3,812	11,540	..	35,995	2,823	— 625	..
(c) Deputation and other allowances.	..	..	..	236	..	..	236	..	..	..
Voted—										
(d) Superior officers appointed in India.	..	4,582	5,422	3,498	10,162	3,908	27,572	..	4,905	9,864
(e) Subordinate forest and depot establishments.	..	49,979	18,556	24,798	32,166	17,467	1,42,966	..	35,644	38,854
(f) Office establishments	8,101	13,332	6,177	8,037	10,899	5,764	52,310	7,776	8,016	8,094
(g) Deputation and other allowances.	..	4,079	..	7,060	226	..	11,365	..	..	..
II. Travelling allowances—										
(a) Conservators	3,952	..	146	266	36	..	4,400	860	..	100
(b) Superior officers	1,342	8,491	3,407	2,482	3,054	3,427	22,203	662	1,937	2,141
(c) Subordinate forest and depot establishments.	— 164	15,631	5,266	6,948	10,682	5,417	43,780	..	7,584	8,953
(d) Office establishments	1,906	4,044	1,728	2,057	4,208	1,120	15,063	1,427	1,861	1,635
II. Contingencies—										
Non-voted—										
Rates and taxes	190	286	272	..	..	75	823	..	245	168
Voted—										
(a) Contract items—										
(1) Service postage and telegram charges.	500	1,206	1,003	951	1,369	876	5,905	603	721	958
(2) Other contract contingencies.	3,001	2,456	1,422	1,187	3,017	1,321	12,404	4,970	2,092	1,721
(b) Non-Contract items—										
(1) Rents, rates and taxes	340	46	10	129	69	120	714	600	57	20
(2) Sundries	..	298	92	242	601	43	1,276	..	..	51
Total, B. Establishments	34,523	1,28,430	43,501	61,763	88,424	39,538	3,96,125	33,121	62,437	72,559
Grand Total of Expenditure, A and B	27,410	5,16,360	56,017	91,767	1,26,091	53,454	8,71,039	36,441	74,078	84,764

Summary of expenditure of the different districts for the Forest year 1921–22—*cont.*

Circle.					Third Circle.								
Guntur.	Kurnool, East.	Kurnool, South.	Kurnool, West.	Total.	Direction.	Cuddapah, North.	Cuddapah, South.	Cuddapah, West.	Nellore.	Chingleput.	Chittoor.	Vellore, North.	Total.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
..	2,238	83	5,756	8,077	..	..	423	..	..	..	106	..	529
..	897	..	10,202	11,103	..	..	..	..	12	..	187	9	208
..	2,044	..	5,678	7,722	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	51	..	..	..	212	32	295
..	3,270	83	1,038	4,444	..	..	..	..	7,440	12	..	94	7 546
2,822	3,744	3,250	8,822	22,504	..	3,347	2,287	4,171	2,758	1,251	8,588	2,113	24,515
..	5	197	12	227	..	30	11	28	..	..	..	..	69
..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	2 948	2,948	..	..	..	..	..	20	3	..	23
673	1,129	373	2,081	8,124	32	1,607	1,416	44	1,390	531	377	198	5,595
466	4,847	7,206	5,928	18,692	..	..	12,008	1,595	518	2,486	3,996	1,027	21,630
2,865	6,302	4,587	3,209	24,477	..	6,587	8,435	4,716	5,803	8,265	10,453	3,349	47,608
493	1,321	64	912	2,810	..	404	871	109	146	416	399	18	2,363
231	46	20	509	4,347	..	..	..	14	1,693	1,412	2,143	67	5,329
..	..	..	..	..	..	..	..	..	1,073	..	358	..	1,431
..	1,026	..	443	1,574	529	..	..	..	1,483	..	..	605	2,617
..	..	..	..	..	..	..	..	..	..	..	..	..	..
17	..	..	.	17	..	..	..	..	..	..	..	..	..
62	840	165	3,055	4,353	..	5	370	44	8	21	2,211	1,988	4,647
..	4,538	10,227	5,501	22,119	..	5,939	5,549	4,060	1,971	1,115	6,056	604	25,294
8,712	2,754	..	6	16,668	..	109	3,304	3,952	2,381	1,543	12,373	8,274	31,986
7	..	..	..	7	..	..	..	..	..	..	4	.	4
..	..	16	58	81	..	..	1	..	..	..	8	9	18
70	313	..	896	1,449	6	65	403	5	3	..	384	282	1,148
15,918	35,314	26,271	57,074	1,61,743	567	18,093	35,129	18,738	26,674	17,122	47,858	18,669	1,82,855
..	..	..	..	13,400	29,095	..	..	..	..	2,021	..	..	31,116
16,119	..	..	..	18,317	..	..	14,098	..	8,952	..	1,150	..	24,400
..	..	..	..	..	..	..	..	..	..	..	..	..	..
1,890	5,513	8,664	12,024	42,860	..	3,536	800	4,463	6,658	4,668	10,590	4,247	34,962
34,888	31,282	40,630	41,127	2,22,425	480	36,176	40,138	34,321	53,811	30,585	58,741	24,128	2,78,380
9,376	9,118	9,983	12,687	65,050	10,213	8,133	9,113	9,708	8,793	6,229	9,328	6,271	67,788
..	1,942	3,864	4,695	10,501	..	125	..	4	..	..	..	..	129
280	..	200	406	1,846	2,195	1,385	..	..	191	..	1,062	90	4,923
2,836	1,966	2,507	3,424	15,473	..	2,306	2,178	687	4,451	2,791	3,494	2,570	18,457
7,827	8,803	10,320	12,728	56,215	..	11,182	8,072	8,958	12,832	6,415	10,949	5,022	63,430
1,785	2,297	3,431	3,243	15,679	1,591	1,836	1,705	2,310	2,254	2,164	3,512	1,294	16,666
26	13	47	79	578	..	40	12	..	30	40	170	107	399
793	1,133	877	841	5,926	901	574	611	527	1,051	538	983	692	5,877
1,341	2,182	2,000	2,678	16,984	2,425	1,979	1,295	1,276	1,923	1,506	1,931	720	13,055
48	269	22	73	1,089	..	..	55	160	59	540	84		898
..	85	..	..	136	68	234	137	38	72	..	— 74	..	475
77,209	64,603	82,545	94,005	4,86,479	46,968	67,506	78,214	62,452	1,01,057	57,497	1,01,920	45,141	5,60,755
93,127	99,917	1,08,816	151,079	6,48,222	47,535	85,599	113,343	81,190	1,27,736	74,619	1,49,778	63,810	7,43,610

Summary of expenditure of the different districts for the Forest year 1921-22—*cont.*

Budget heads.	Fourth Circle.									Fifth	
	Direction.	Forest Engineer.	Vellore, South.	Vellore West.	Salem, East.	Salem, North.	Salem, Central.	Salem, South.	Total.	Direction.	Kollegal.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs	Rs.	Rs.	Rs.	Rs.	Rs.
I. Refunds and Drawbacks ..	..	..	..	..	..	..	..	..	..	..	..
Voted—											
Conservancy and Works.											
I. Timber and other produce removed from the forests by Government Agency—											
(*a*) Timber	..	..	..	329	..	152	..	..	481	..	..
(*b*) Firewood and charcoal.	..	..	..	..	..	32	..	..	32	..	..
(*c*) Bamboos	..	..	..	..	..	..	..	..	..	..	..
(*d*) Sandalwood	— 66	..	4,875	4,210	2,226	11,910	1,445	1,189	25,789	707	3,011
(*e*) Grass and other minor produce.	..	..	..	2	27	17	— 6	..	40	..	107
II. Timber and other produce removed from the forests by consumers or purchasers.	..	..	843	1,162	1,634	970	3,187	4,265	12,061	..	3,370
III. Confiscated, drift and waif-wood.	..	..	2	18	..	..	2	30	52	..	..
IV. Forests not managed by Government.											
(*a*) Shared and private forests.	..	..	..	..	..	..	..	..	..	..	..
V. Rent of leased forests and payments to shareholders in forests managed by Government.	..	..	..	..	..	19	..	..	19	..	..
VI. Live-stock, stores, tools and plant—											
(*a*) Purchase of cattle ..	..	..	..	..	..	..	..	..	..	1,247	..
(*b*) Feed and keep of cattle.	..	..	..	..	..	..	..	..	..	..	..
(*c*) Stores, tools and plant.	2,032	92	601	125	156	623	203	122	3,954	1,928	77
VII. Communications and buildings—											
(*a*) Roads and bridges ..	..	18,013	132	..	162	859	598	1,328	21,092	1,165	5,228
(*b*) Buildings	..	654	2,291	1,880	2,817	3,254	2,204	5,543	18,643	7,916	2,187
(*c*) Other works	..	..	445	6	170	52	97	..	770	— 3	825
VIII. Demarcation, improvement and extension of forests—											
(*a*) Demarcation	..	..	36	144	856	51	164	373	1,624	..	769
(*b*) Cost of Forest Settlement; compensation for land and rights.	..	..			81	281	..	174	536	..	..
(*c*) Surveys .. { Local ..	..	..	..	446	458	..	..	1,352	2,256	..	..
{ India ..	..	..	..	..	..	..	..	..	..	..	..
(*d*) Working-plans ..	86	..	..	..	..	..	..	..	86	67	..
(*e*) Sowing and planting..	..	..	977	183	246	2,123	483	102	4,114	..	9
(*f*) Protection from fire ..	..	..	715	1,458	753	1,247	1,640	869	6,682	..	1,697
(*g*) Other works	..	..	3,422	2,893	6,427	5,923	4,970	2,205	25,840	..	1,522
IX. Miscellaneous—											
Non-voted.											
(*a*) Rates and taxes ..	..	..	..	10	..	..	10	— 3	17	..	..
Voted.											
(*b*) Law charges	..	..	..	6	2	..	..	— 41	— 33	..	..
(*c*) Other charges ..	..	..	140	129	177	123	..	392	961	67	39
Total, Conservancy and Works ..	2,052	18,759	14,479	13,001	16,192	27,636	14,997	17,900	1,25,016	13,094	18,841
Establishments.											
I. Salaries—											
Non-voted.											
(*a*) Conservators	25,308	..	..	..	..	..	..	.	25,308	24,693	..
(*b*) Superior officers appointed by the Secretary of State.	11,827	630	..	1,750	1,450	5,615	..	..	21,272	..	..
(*c*) Deputation and other allowances.											
Voted—											
(*d*) Superior officers appointed in India.	..	4,206	7,463	2,887	6,987	4,855	9,417	5,480	41,295	3,014	4,896
(*e*) Subordinate Forest and depot establishments.	52	4,865	28,479	25,338	34,630	26,455	25,722	32,349	1,77,890	2,965	29,593
(*f*) Office establishments ..	10,735	2,354	8,135	8,653	7,257	8,525	9,281	9,673	64,613	9,887	7,298
(*g*) Deputation and other allowances.	..	1,370	..	100	..	130	..	457	2,057	13	1,350
II. Travelling allowances—											
(*a*) Conservators	2,434	..	225	..	..	..	..	121	2,780	5,031	..
(*b*) Superior officers	1,176	1,297	1,893	1,319	2,012	2,195	2,732	3,320	15,944	1,172	2,516
(*c*) Subordinate forest and depot establishments.	19	1,274	6,250	5,323	7,484	8,548	4,725	7,412	41,035	574	4,181
(*d*) Office establishments ..	1,080	609	1,188	1,050	1,498	1,073	775	1,756	9,029	1,273	1,158
III. Contingencies—											
Non-voted.											
(*a*) Rates and taxes	..	..	205	20	55	23	2	9	314	68	53
Voted.											
(*a*) Contract items—											
(1) Service postage and telegram charges.	554	— 250	876	784	870	1,099	1,055	1,358	6,346	998	462
(2) Other contract contingencies.	1,515	..	1,606	947	1,710	1,305	1,680	1,695	10,458	2,535	2,393
(*b*) Non-contract items—											
(1) Rents	..	588	..	..	79	2	..	121	790	..	5
(2) Sundries	3	1,234	31	..	180	148	109	15	1,720	188	93
Total, Establishments ..	54,703	18,177	56,351	48,171	64,212	59,973	55,498	63,766	4,20,851	52,391	54,008
Grand Total of Expenditure ..	56,755	36,936	70,830	61,172	80,404	87,609	70,495	81,666	5,45,867	65,325	72,849

Summary of expenditure of the different districts for the Forest year 1921–22—*cont.*

Circle.						Sixth Circle.								
North Coimbatore.	South Coimbatore.	Madura.	Tinnevelly.	Forest Engineer.	Total.	Direction.	North Mangalore.	South Mangalore.	Wynad.	Nilambur.	Palghat.	The Nilgiris.	Forest Research Officer.	Total.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
120	75,975	1,207	8	..	77,310	..	4,599	22,065	18,514	25,132	72,579	6,189	..	1,49,078
..	..	..	2	..	2	..	750	2,835	..	..	244	25,927	..	29,756
..	..	..	..	..	..	..	..	1	90	18,937	81	16	..	19,123
14,199	..	71	168	..	18,156	..	479	406	..	..	..	168	..	1,053
..	..	..	..	..	107	..	..	248	5	210	..	590	..	1,053
4,258	1,702	2,727	4,438	..	16,495	..	1,777	1,713	431	1,818	2,534	2	..	8,275
2	10	2	..	..	14	..	43	1	..	..	8	..	..	52
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	2,500	..	..	..	2,500	..	..	..	90	1,500	..	..	..	1,590
..	4,103	..	39	..	5,389	..	..	8	3,920	498	6,310	5,162	..	15,898
153	45,751	..	..	..	45,904	..	..	6,269	27,771	26,914	29,663	55,644	..	1,46,261
1,163	5,286	238	813	92	9,597	2,544	151	347	6,229	2,338	72,291	3,140	2,944	89,984
11,049	7,563	17,579	6,162	23,568	72,314	..	1,432	606	3,984	1,492	31,148	9,623	..	48,285
3,509	2,219	9,085	5,162	..	30,078	18	6,683	1,139	3,917	4,667	29,790	6,441	200	52,855
365	908	538	40	..	2,673	..	232	296	281	35	667	1,216	..	2,727
19	381	2,845	223	..	4,242	..	..	..	591	313	13	459	..	1,376
..	..	799	6,673	..	7,472	..	..	..	..	..	..	..	..	..
708	..	..	..	..	708	..	..	18	13	..	1,182	679	..	1,892
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	10	..	..	77	..	..	..	..	5,077	..	..	..	5,077
394	749	3,723	2,072	..	6,947	..	2,095	5,375	2,541	13,983	7,081	5,406	..	36,481
3,900	1,916	6,586	3,898	..	17,997	..	3,508	3,853	2,950	2,822	3,004	3,545	..	19,682
6,480	5,799	10,601	2,768	..	27,170	..	170	1,257	2,461	943	4,306	2,639	..	11,776
20	15	..	..	..	35	..	..	1	..	..	..	291	..	292
..	..	1	..	..	1	..	79	2	11	..	15	..	..	107
145	1,515	3	72	..	1,841	..	576	592	388	294	2,149	7,302	2,404	13,705
46,484	156,392	53,015	32,543	23,660	3,47,029	2,562	22,574	47,030	74,187	1,06,973	2,63,065	1,34,439	5,548	6,56,378
..	..	..	..	..	24,693	22,901	..	..	..	..	..	..	..	22,901
19,200	9,944	..	2,673	630	32,447	1,521	..	5,430	..	..	2,500	18,750	625	28,826
..	..	6,022	6,072	4,806	24,840	..	4,168	3,911	5,207	9,328	13,199	..	13,155	48,968
37,873	28,632	40,238	40,097	4,831	1,84,229	1,526	29,433	22,207	17,246	18,105	28,374	30,825	4,998	1,52,714
9,692	10,782	9,709	10,111	2,354	59,833	8,750	7,631	7,291	7,399	9,182	8,579	9,478	1,981	60,291
431	6,228	644	..	1,370	10,036	1,748	..	..	10,843	360	12	11,823	..	24,786
..	..	..	738	..	5,769	5,497	..	..	..	..	..	..	..	5,497
2,410	1,807	2,651	2,130	1,296	13,982	892	1,270	2,653	3,552	3,411	5,094	2,223	3,754	22,849
12,900	7,210	10,440	9,918	1,289	46,512	880	6,865	6,342	4,002	3,633	8,895	7,822	2,215	39,954
3,091	1,998	2,886	1,432	609	12,457	1,556	1,251	1,642	1,209	1,806	2,287	1,845	704	12,300
19	32	93	121	..	386	9	..	25	..	170	112	149	..	465
1,077	977	1,085	947	150	5,696	989	700	1,243	750	450	615	890	263	5,900
2,815	1,379	1,670	1,551	..	12,343	3,332	1,920	1,464	1,005	1,615	1,458	1,773	626	13,193
87	..	300	150	588	1,130	..	..	..	..	43	37	..	..	80
146	674	..	184	834	2,069	116	69	21	114	1,218	30	66	..	1,634
89,741	69,663	75,738	76,124	18,757	4,36,422	49,217	53,107	52,229	51,327	49,321	71,192	85,644	28,321	4,40,358
136,225	226055	131,753	108,667	42,417	783,451	51,779	75,681	99,259	125,514	1,56,294	3,34,257	2,20,083	33,869	10,96,736

* Includes Rs. 905 relating to V Circle, being cost of buffaloes purchased for South Coimbatore.

Summary of receipts and expenditure during 1921-22 for each circle and for the Presidency compiled in the Chief Conservator's office from Conservators' statements.

Budget heads.	First Circle.	Second Circle.	Third Circle.	Fourth Circle.	Fifth Circle.	Sixth Circle.	Grand total, Presidency.	
							1921-22.	1920-21.
RECEIPTS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
I. Timber and other produce removed from the forests by Government agency—								
(a) Timber	33,913	15,751	2,639	886	2,31,101	4,90,773	7,75,063	5,78,739
(b) Firewood and charcoal ..	3,893	4,165	3,570	349	837	44,585	57,399	55,997
(c) Bamboos	16	12,113	14	168	..	5,883	18,194	20,413
(d) Sandalwood	..	..	17	3,74,181	2,48,431	11,902	6,34,531	7,36,231
(e) Grass and other minor produce.	340	9,904	68,231	8	332	1,814	80,629	64,462
Total, I ..	38,162	41,933	74,471	3,75,592	4,80,701	5,54,957	15,65,816	14,55,842
II. Timber and other produce removed from the forests by consumers or purchasers—								
(a) Timber	36,488	41,795	62,688	74,296	35,837	70,889	3,21,993	2,81,996
(b) Firewood and charcoal ..	99,245	46,335	1,14,613	98,300	2,71,400	74,361	7,04,254	6,60,970
(c) Bamboos	86,865	34,662	24,438	98,947	37,975	17,139	3,00,026	2,61,326
(d) Grazing and fodder grass..	52,212	2,09,427	2,08,911	1,68,169	1,17,189	33,823	7,89,731	8,16,589
(e) Other produce	52,803	1,61,625	1,17,971	1,37,739	92,532	28,106	5,90,776	6,28,566
(f) Tree-owners' fees	22,927	43,652	24,776	6,428	52	591	98,426	1,03,076
(g) Other items	..	..	..	492	..	..	492	— 280
(h) Commutation fees	..	..	..	1,148	..	..	1,148	900
Total, II ..	3,50,540	5,37,496	5,53,397	5,85,519	5,54,985	2,24,909	28,06,846	27,53,143
III. Confiscated drift and waifwood ..	4,332	4,262	2,268	2,196	3,584	1,388	18,030	11,472
IV. Revenue from forests not managed by Government.	..	..	..	..	..	..	..	..
V. Miscellaneous—								
(a) Fines and forfeitures ..	19,392	40,044	74,300	73,226	43,299	27,644	2,77,905	2,17,666
(b) Other sources	12,856	10,847	7,280	7,749	95,398	31,861	1,65,991	1,78,061
Total, V ..	32,248	50,891	81,580	80,975	1,38,697	59,505	4,43,896	3,95,727
	4,25,282	6,34,582	7,11,716	10,44,282	11,77,967	8,40,759	48,34,588	47,15,084
Deduct refunds—voted ..	10,230	2,981	10,748	9,964	2,460	1,305	37,688	98,900
Grand Total, Receipts ..	4,15,052	6,31,601	7,00,968	10,34,318	11,75,507	8,39,454	47,96,900	46,16,184
EXPENDITURE.								
A. Conservancy and Works.								
I. Timber and other produce removed from the forests by Government agency—								
(a) Timber	54,369	8,077	529	481	77,310	1,49,078	2,89,844	2,34,004
(b) Firewood and charcoal ..	183	11,103	208	32	2	29 756	41,284	30,354
(c) Bamboos	6	7,722	..	..	..	19,123	26,851	34,134
(d) Sandalwood	..	..	295	25,789	18,156	1,053	45,293	34,055
(e) Grass and other minor produce.	362	4,444	7,546	40	107	1,053	13,552	9,448
Total, *A*-I ..	54,920	31,346	8,578	26,342	95,575	2,00,063	4,16,824	3,41,995
II. Timber and other produce removed from the forests by consumers or purchasers.	31,656	22,504	24,515	12,061	16,495	8,275	1,15,506	1,11,629
III. Confiscated drift and waifwood ..	1,684	227	69	52	14	52	2,098	1,289
IV. Forests not managed by Government—								
(a) Shared and Private forests.	..	..	..	..	..	..	..	..
V. Rent of leased forests by payments to shareholders in forests managed by Government.	478	..	..	19	2,500	1,590	4,587	3,929
VI. Live-stock, stores, tools and plant—								
(a) Purchase of cattle ..	50	..	..	..	5,389	15,898	21,337	8,766
(b) Feed and keep of cattle ..	2,024	2,948	23	..	45,904	1,46,261	1,97,160	1,55,325
(c) Stores, tools and plant ..	2,40,390	8,124	5,595	3,954	9,597	89,984	3,57,644	66,719
Total, *A*-VI ..	2,42,464	11,072	5,618	3,954	60,890	2,52,143	5,76,141	2,30,810
VII. Communications and buildings—								
(a) Roads and bridges ..	20,105	18,692	21,680	21,092	72,314	48,285	2,02,118	2,93,950
(b) Buildings	78,526	21,477	47,608	18,643	30,078	52,856	2,52,187	1,86,870
(c) Other works	994	2,810	2,363	770	2,673	2,727	12,337	11,177
Total, *A*-VII ..	99,625	45,979	71,601	40,505	1,05,065	1,03,867	4,66,642	4,91,997

Summary of receipts and expenditure during 1921-22 for each circle and for the Presidency compiled in the Chief Conservator's office from the Conservators' statements—*cont.*

Budget heads.	First Circle.	Second Circle.	Third Circle.	Fourth Circle.	Fifth Circle.	Sixth Circle.	Grand total, Presidency.	
							1921-22.	1920-21.
EXPENDITURE—*cont.*	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
A. Conservancy and Works—cont.								
VIII. Demarcation, etc.—								
(*a*) Demarcation	1,840	4,347	5,329	1,624	4,242	1,376	18,758	14,242
(*b*) Cost of forest settlement compensation for land and rights.	789	..	1,431	536	7,472	..	10,228	— 11,199
(*c*) Surveys. (1) Local ..	5,179	1,574	2,617	2,256	708	1,892	14,226	11,614
(2) India ..	..	..	..	..	..	..	..	..
(*d*) Working-plans	2,018	17	..	86	77	5,077	7,275	1,465
(*e*) Sowing and planting ..	1,682	4,355	4,647	4,114	6,947	36,481	58,224	43,429
(*f*) Protection from fire ..	20,076	22,119	25,294	6,682	17,997	19,682	1,11,850	1,03,521
(*g*) Other works	11,018	16,668	31,986	25,840	27,170	11,776	1,24,458	1,20,948
Total, *A*-VIII ..	42,602	49,078	71,304	41,138	64,613	76,284	3,45,019	2,84,020
IX. Miscellaneous—								
Non-voted—								
(*a*) Rates and taxes	196	81	4	17	35	292	625	736
Voted—								— 1,407
(*b*) Law charges	28	1,449	18	— 33	1	107	1,570	— 11,876
(*c*) Other charges	1,261	7	1,148	961	1,841	13,705	18,923	16,358
Total, *A*-IX ..	1,485	1,537	1,170	945	1,877	14,104	21,118	3,811
Total, *A*. Conservancy and Works	4,74,914	1,61,743	1,82,855	1,25,016	3,47,029	6,56,378	19,47,935	(*a*)15,68,380
B. Establishment.								
I. Salaries—								
Non-voted—								
(*a*) Conservators	19,113	13,400	31,116	25,308	24,693	22,901	1,36,531	99,357
(*b*) Superior officers appointed by Secretary of State	35,995	13,317	24,200	21,272	32,447	28,826	1,61,057	2,69,081
(*c*) Deputation and other allowances.	236	..	..	..	..	..	236	8,53,710
Voted—								
(*d*) Superior Officers appointed in India.	27,572	42,860	34,962	41,295	24,840	48,968	2,20,497	2,68,005
(*e*) Subordinate forest and Depot establishment.	1,42,966	2,22,425	2,78,380	1,77,890	1,84,229	1,52,714	11,58,604	42,358
(*f*) Office establishments ..	52,310	65,050	67,788	64,613	59,833	60,291	3,69,885	— 512
(*g*) Deputation and other allowances.	11,365	10,501	129	2,057	10,036	24,786	58,874	— 34,364
Total, *B*-I ..	2,89,557	3,72,553	4,36,575	3,32,435	3,36,078	3,38,486	21,05,684	14,97,635
II. Travelling allowance—								
(*a*) Conservators	4,400	1,846	4,923	2,780	5,769	5,497	25,215	8,366
(*b*) Superior officers	22,203	15,473	18,457	15,944	13,982	22,849	1,08,908	56,864
(*c*) Subordinate Forest and Depot establishments.	43,780	56,215	63,439	41,035	46,512	39,954	2,90,926	1,61,955
(*d*) Office establishment ..	15,063	15,679	16,666	9,029	12,457	12,300	81,194	50,770
Total, *B*-II ..	85,446	89,213	1,03,476	68,788	78,720	80,600	5,06,243	2,77,955
III. Contingencies—								
Non-voted—								
Rates and taxes	823	578	399	314	386	465	2,965	66,966
Voted—								
(*a*) Contract items—								
(1) Service postage and telegrams charges.	5,905	5,926	5,877	6,346	5,696	5,900	35,650	..
(2) Other contract contingencies.	12,404	16,984	13,055	10,458	12,343	13,193	78,437	11,586
(*b*) Non-contract items—								
(1) Rents, rates and taxes.	714	1,089	898	790	1,130	80	4,701	
(2) Sundries	1,276	136	475	1,720	2,069	1,634	7,310	..
Total, *B*-III ..	21,122	24,713	20,704	19,628	21,624	21,272	1,29,063	78,552
Total, *B*. Establishment ..	3,96,125	4,86,479	5,60,755	4,20,851	4,36,422	4,40,358	27,40,990	18,54,142
	..	..	..	..	..	..	* 1,53,441	..
Grand Total of Expenditure *A* and *B* ..	8,71,039	6,48,222	7,43,610	5,45,867	7,83,451	10,96,736	48,42,366	34,22,522
Surplus ..	—4,55,987	— 16,621	— 42,642	4,88,451	3,92,056	— 2,57,282	— 45,466	11,93,662
Total ..	4,15,052	6,31,601	7,00,968	10,34,318	11,75,507	8,39,454	47,96,900	46,16,184

* Pay of Chief Conservator, his office establishment, contingencies, etc.

(*a*) Includes refunds (Rs. 98,900).

ANNUAL FORM No. 81.

Forest Department, Madras Presidency.

Outstandings and liabilities on account of contractors and disbursers for the period from 1st April 1921 to 31st March 1922.

District.	Department debtor.			Department creditor.			Balance due.	
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To department (outstandings).	By department (liabilities).
First Circle.		RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
Chief Conservator's Office ..	..	65 0 11	865 0 11	865 0 11	..	865 0 11	..	..
Direction	..	1,219 6 6	1,219 6 6	22 9 5	1,206 9 3	1,229 2 8	9 12 2	..
Ganjam	..	2,64,619 13 9	2,64,619 13 9	1,857 12 3	2,64,681 14 5	2,66,539 10 8	1,919 12 11	..
Vizagapatam	..	43,328 13 10	43,328 13 10	346 5 6	43,363 10 3	43,709 15 9	381 1 11	..
Godavari, Upper	..	79,273 0 8	79,273 0 8	191 13 9	82,469 5 3	82,661 3 0	3,388 2 4	..
Do. Lower	..	94,850 10 3	94,850 10 3	973 13 9	94,058 10 0	95,032 7 9	181 13 6	..
Kistna	..	39,967 15 7	39,967 15 7	667 15 10	39,948 0 4	40,616 0 2	648 0 7	..
Total ..	..	5,23,259 12 7	5,23,259 12 7	4,060 6 6	5,25,728 1 6	5,29,788 8 0	6,528 11 5	..
Second Circle.								
Direction	..	2,170 7 8	2,170 7 8	..	2,240 9 5	2,240 9 5	70 1 9	..
Guntur	..	67,844 8 9	67,844 8 9	440 1 6	67,918 8 6	68,358 10 0	514 1 3	..
Kurnool, East	..	89,566 3 8	89,566 3 8	1,078 14 11	89,267 1 11	90,346 0 10	779 13 2	..
Do South	..	91,291 7 10	91,291 7 10	329 13 2	91,206 14 8	91,536 11 10	245 4 0	..
Do. West	..	1,26,148 8 3	1,26,148 8 3	955 4 8	1,25,326 14 8	1,26,782 3 4	633 11 1	..
Bellary	..	60,898 5 5	60,898 5 5	62 2 11	61,127 10 0	61,189 12 11	291 7 6	..
Anantapur	..	67,436 15 10	67,436 15 10	283 0 1	67,452 3 11	67,735 4 0	298 4 2	..
Total ..	..	5,05,356 9 5	5,05,356 9 5	3,149 5 3	5,05,039 15 1	5,08,189 4 4	2,832 10 11	..
Third Circle.								
Direction	..	2,829 9 8	2,829 9 8	25 15 8	2,816 14 2	2,842 13 10	12 4 2	..
North Cuddapah	..	74,482 15 6	74,482 15 6	30 14 4	74,564 6 4	74,595 4 8	112 5 2	..
South do.	..	95,923 12 9	95,923 12 9	457 7 0	96,186 15 5	96,644 6 5	720 9 8	..
West do.	..	77,347 4 6	77,347 4 6	334 8 4	80,406 12 2	80,741 4 6	3,394 0 0	..
Nellore	..	97,502 7 9	97,502 7 9	9 13 9	97,784 14 7	97,794 12 4	292 4 7	..
Chittoor	..	1,48,079 4 6	1,48,079 4 6	3,532 8 2	1,44,942 4 9	1,48,474 12 11	395 8 5	..
North Vellore	..	52,179 7 9	52,179 7 9	392 0 9	51,841 15 2	52,233 15 11	54 8 2	..
Chingleput	..	54,020 10 3	54,020 10 3	620 8 0	53,635 14 11	54,256 6 11	235 12 8	..
Total ..	..	6,02,365 8 8	6,02,365 8 8	5,403 12 0	6,02,180 1 6	6,07,583 13 6	5,218 4 10	..
Fourth Circle.								
Direction	..	1,235 11 9	1,235 11 9	37 15 1	1,231 0 3	1,268 15 4	33 3 7	..
South Vellore	..	52,860 14 9	52,860 14 9	598 2 7	52,506 13 1	53,104 15 8	244 0 11	..
West Do.	..	49,501 8 8	49,501 8 8	293 5 10	49,357 13 9	49,651 3 7	149 10 11	..
East Salem	..	59,134 0 2	59,134 0 2	1,524 12 8	58,277 15 3	59,802 11 11	668 11 9	..
North do.	..	82,830 2 1	82,830 2 1	266 12 7	83,373 5 5	83,640 2 0	809 15 11	..
Central do.	..	56,971 14 1	56,971 14 1	666 7 4	56,747 3 0	57,413 10 4	441 12 3	..
South do.	..	74,798 9 10	74,798 9 10	986 1 6	74,622 7 2	75,558 8 8	759 14 10	..
Forest Engineer's Office ..	..	22,074 9 5	22,074 9 5	1,202 11 2	21,400 3 4	22,602 14 6	528 5 1	..
Total ..	..	3,99,407 6 9	3,99,407 6 9	5,526 4 9	3,97,516 13 3	4,03,043 2 0	3,635 11 3	..
Fifth Circle.								
Direction	..	17,887 0 2	17,887 0 2	7 3 9	19,486 15 5	19,494 3 2	1,607 3 0	..
Madura	..	1,44,556 3 10	1,44,556 3 10	755 10 10	1,45,679 5 3	1,46,435 0 1	1,878 12 3	..
Tinnevelly	..	96,839 13 6	96,839 13 6	2,989 11 2	95,019 3 7	98,008 14 9	1,169 1 3	..
Kollegal	..	68,505 5 8	68,505 5 8	333 4 9	68,196 6 1	68,529 10 10	24 5 2	..
Coimbatore, North	..	1,26,954 14 7	1,26,954 14 7	483 14 5	1,26,561 11 10	1,27,045 10 3	90 11 8	..
Do. South	..	2,08,331 14 2	2,08,331 14 2	564 12 1	2,09,901 8 2	2,10,466 4 3	2,134 6 1	..
Total ..	..	6,63,075 3 11	6,63,075 3 11	5,134 9 0	6,64,845 2 4	6,69,979 11 4	6,904 7 5	..
Sixth Circle.								
Direction	..	11,891 9 10	11,891 0 10	12,558 3 6	(a) 628 3 6	11,930 0 0	38 15 2	..
The Nilgiris	..	1,67,184 14 7	1,67,184 14 7	1,165 4 10	1,67,393 13 7	1,68,559 2 5	1,374 3 10	..
Wynad	..	94,846 7 11	94,846 7 11	497 6 5	94,770 5 6	95,267 11 11	421 4 0	..
Nilambur	..	1,21,025 2 8	1,21,025 2 8	6,119 12 9	1,24,353 3 5	1,30,473 0 2	9,447 13 6	..
Mangalore, North	..	77,098 7 0	77,098 7 0	185 7 7	76,931 10 5	77,117 2 0	18 11 0	..
Do. South	..	87,366 3 5	87,366 3 5	1,299 3 3	86,257 11 1	87,656 14 4	290 10 11	..
Forest Research office ..	..	10,597 11 3	10,597 11 3	1,029 10 11	10,013 11 3	11,043 6 2	445 10 11	..
Palghat	..	2,15,593 3 1	2,15,593 3 1	3,396 13 2	2,13,716 13 2	2,17,113 10 4	1,520 7 3	..
Total ..	..	7,85,603 2 9	7,85,603 2 9	26,351 14 5	7,72,809 0 11	7,99,160 15 4	13,557 12 7	..
Grand total, Presidency ..	..	34,79,132 13 0	34,79,932 13 0	50,491 4 10	34,68,119 2 7	35,18,610 9 5	38,677 10 5	..

(a) Due to the transfer to Nilambur division of a debit of Rs. 1,944-5-1, being balance of advance paid to the Inspector of Livestock, Calicut, for thepurchase of bulls for Government at Dharwar.

ACCOUNTANT-GENERAL'S OFFICE,
MADRAS, 16*th August* 1922.

C. SUBRAHMANYA AYYAR,
Deputy Accountant-General.

Annual Form No. 82.

Forest Department, Madras Presidency.

Revenue received and outstandings on account of revenue during 1921–22.

District.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realized during year.	Balance due to the department at end of year.
		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
First Circle.						
Direction	Timber and other forest produce.	..	1,350 0 0	1,350 0 0	1,350 0 0	..
Ganjam	Do.	3,098 2 6	69,057 5 9	72,155 8 3	68,442 0 0 (a) 17 0 0	3,696 8 3
Vizagapatam	Do.	12,090 10 8	40,006 5 10	52,097 0 6	49,721 0 0	2,376 0 6
Godavari, Upper	Do.	274 14 3	48,327 15 2	48,602 13 5	45,968 0 0	2,634 13 5
Do. Lower	Do.	5,303 4 0	1,85,192 14 10	1,90,496 2 10	1,89,692 0 0	804 2 10
Kistna	Do.	1,379 2 4	61,408 3 0	62,787 5 4	60,318 0 0	2,469 5 4
	Total ..	22,146 1 9	4,05,342 12 7	4,27,488 14 4	415,508 0 0	11,980 14 4
Second Circle.						
Direction	Timber and other forest produce.	..	15 0 0	15 0 0	15 0 0	..
Bellary	Do.	5,019 7 0	93,309 4 0	98,328 11 0	97,014 0 0	1,314 11 0
Anantapur	Do.	19,002 10 6	1,54,838 11 5	1,73,841 5 11	1,69,879 0 0 (a) 50 11 2	3,911 10 9
Guntur	Do.	1,594 10 0	1,06,646 14 0	1,08,241 8 0	1,07,084 0 0	1,157 8 0
Kurnool, East	Do.	50 0 0	69,569 4 0	69,619 4 0	65,339 0 0 (a) 50 0 0	4,230 4 0
Do. South	Do.	101 8 0	84,277 12 0	84,379 4 0	82,624 0 0	(c) 1,755 4 0
Do. West	Do.	15,166 7 3	1,07,727 0 9	1,22,893 8 0	1,09,646 0 0 (d) 13,152 8 0	95 0 0
	Total ..	40,934 10 9	6,16,383 14 2	6,57,318 8 11	6,30,263 0 0 (a) 13,253 3 2	12,464 5 9
Third Circle.					6,44,854 3 2	
Cuddapah, North	Timber and other forest produce.	7,700 12 0 (a) — 110 0 0	40,141 4 10	47,732 0 10	41,545 2 4	6,186 14 6
Do. South	Do.	15,389 0 0	36,850 11 6	52,239 11 6	35,321 9 6	16,918 2 0
Do. West	Do.	7,928 11 6	71,769 5 5	79,698 0 11	70,823 9 2	8,874 7 9
Nellore	Do.	52,016 6 10 (a) — 97 12 0	2,37,051 14 4	2,88,970 9 2	2,39,023 1 7	49,947 7 7
Chingleput	Do.	5,267 0 3 (a)— 73 8 0	63,580 11 11	68,774 4 2	64,014 10 2	4,759 10 0
Chittoor	Do.	17,270 4 5 (b)—14,815 4 5	1,43,515 5 5	1,45,970 5 5	1,36,062 5 6	9,907 15 11
Vellore, North	Do.	14,381 14 1 (a) — 151 6 10 (c) — 392 7 3	1,57,561 14 5	1,71,399 14 5	1,24,926 0 10	46,473 13 7
	Total ..	1,19,954 1 1 — 15,640 6 6	7,50,471 3 10	8,54,784 14 5	7,11,716 7 1	1,43,068 7 4
Fourth Circle.						
Direction	Timber and other forest produce.	..	2,306 0 0	2,306 0 0	2,306 0 0	..
Vellore, South	Do.	57,590 4 8	1,91,777 4 5	2,49,307 9 1	2,25,027 0 0 (a) 2,843 0 0	21,437 9 1
Do. West	Do.	9,803 2 11	1,55,401 2 5	1,65,204 5 4	1,57,267 0 0	7,937 5 4
Salem, East	Do.	18,010 2 5	1,63,750 4 5	1,81,760 6 10	1,73,428 0 0 (a) 943 2 0	7,389 4 10
Do. North	Do.	7,185 15 8	2,02,578 9 5	2,09,764 9 1	1,94,324 0 0 (a) 2,229 0 0	13,211 9 1
Do. Central	Do.	24,010 13 4	1,05,223 4 3	1,29,234 1 7	1,18,382 0 0 (a) 3,665 9 9	7,186 7 10
Do. South	Do.	10,084 14 5	1,69,185 1 7	1,79,270 0 0	1,73,481 0 0 (a) 10 0 0	5,779 0 0
Forest Engineer	Do.	..	67 0 0	67 0 0	67 0 0	..
	Total ..	1,26,685 5 5	9,90,228 10 6	11,16,913 15 11	10,44,282 0 0 (a) 9,690 11 9	62,941 4 2

Note for First Circle.
- Out of total outstandings of Rs. 11,980-14-4 the amount actually due on or before 31st March 1922 was Rs. 10,132-12-6.
- (a) Written off the accounts.

Note for Second Circle.
- (a) Written off as irrecoverable.
- (b) Out of the amount Rs. 735 alone fell due within the year.
- (c) Out of the amount Rs. 375 alone fell due within the year.
- (d) (Rs. 13,152-8-0) written off by Government in their Proceedings Mis. No. 2280, dated 14th December 1921.

Note for Third Circle.
- (a) Elimination on account of erroneous demand.
- (b) Written off as irrecoverable under G.O Mis. No. 2044, Development, dated 1st November 1921.
- (c) Do. under Chief Conservator's Proceedings No. 1053-Rout., dated 8th July 1921.

Note for Fourth Circle.
- (a) Written off the accounts

Revenue received and outstandings on account of revenue during 1921–22—*cont.*

District.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realized during year.	Balance due to the department at end of year.
Fifth Circle.		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Kollegal	Timber and other forest produce.	3,913 0 0	91,310 1 11	95,223 1 11	94,080 4 8	1,142 13 3
Coimbatore, North	Do.	4,285 0 0	3,74,242 2 10	3,78,527 2 10	3,40,471 7 0	38,055 11 10
Do. South	Do.	92,486 3 4	3,31,557 7 4	4,24,043 10 8	3,53,150 4 6	70,893 6 2
Madura	Do.	76,455 7 1	1,61,499 0 1	2,37,954 7 2	1,86,393 5 3 * 399 3 4	51,161 14 7
Tinnevelly	Do.	69,911 15 0	2,08,817 2 2	2,78,729 1 2	2,05,416 13 2	73,312 4 0
Direction	Do.	..	86 2 1	86 2 1	86 2 1	..
Forest Engineer	Do.	..	169 6 2	169 6 2	169 6 2	..
Sixth Circle.	Total ..	2,47,051 9 5	11,67,681 6 7	14,14,733 0 0	11,79,767 10 10 399 3 4	2,34,566 1 10
Mangalore, North	Timber and other forest produce.	19,852 7 6	95,232 11 0	1,15,085 2 6	96,243 10 10 (a) 1,071 3 7	17,770 4 1
Do. South	Do.	10,374 14 5	60,551 10 3	70,926 8 8	60,719 15 3 (a) 5,919 9 7	4,286 15 10
Wynaad	Do.	1,63,218 2 7	75,698 11 3	2,38,916 13 10	1,34,992 7 5 (a) 385 0 0	1,03,539 6 5
Nilambur	Do.	1,48,522 5 0	1,68,701 5 11	3,17,223 10 11	2,82,012 14 7	35,210 12 4
The Nilgiri	Do.	12,712 8 2	1,05,377 8 2	1,18,090 0 4	1,09,946 6 1 (a) 194 15 1	7,948 11 2
Palghat	Do.	17,879 0 3 * — 7,028 9 5	1,62,102 0 9	1,72,952 7 7	1,56,799 2 0	16,153 5 7
Forest Research Office ..	Do.	..	25 13 5	25 13 5	25 13 5	..
Direction	Do.	..	18 0 0	18 0 0	18 0 0	..
	Total ..	3,65,530 12 6	6,67,707 12 9	10,33,238 9 3	8,40,758 5 7 (a) 7,570 12 8	1,84,909 7 5
Grand total, Presidency ..		9,06,662 2 5	45,97,815 12 5	55,04,477 14 10	48,58,197 6 0	6,51,280 8 10

Note for Fifth Circle.
* Written off the accounts.
NOTE.—Of the total outstandings of Rs. 2,34,566-1-10 the amount actually due on or before 31st March 1922 was Rs. 85,907-3-6.

Note for Sixth Circle.
(a) Amounts written off or removed from demand, owing to cancellation of sales.
* Transferred to V Circle on account of Mettupalaiyam range.
NOTE.—Out of the total outstandings of Rs. 1,84,909-7-5, the amount actually due on or before 31st March 1922, was Rs. 1,67,533-7-5.

ANNUAL FORM No. 83.

Forest Department, Madras Presidency.

Financial results of the year 1921-22.

District.	Timber and other produce removed from the forests by Government Agency.		Other revenue.		Formation, protection and improvement of forests.	Total.	
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.
First Circle.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Ganjam	11,722	3,73,309	57,363	25,000	1,22,961	69,085	5,21,270
Vizagapatam	852	1,644	48,533	47,137	11,392	49,385	60,173
Godavari, Upper ..	24,397	15,641	21,579	34,159	47,867	45,976	97,667
Do. Lower ..	1,051	9,460	1,95,213	1,04,938	20,225	1,96,264	1,34,623
Kistna	140	4,940	64,432	37,460	14,906	64,572	57,306
Total ..	38,162	4,04,994	3,87,120	2,48,694	2,17,351	4,25,282 (a) —10,230	8,71,039
Second Circle.							
Bellary	120	..	96,896	54,397	24,236	97,016	78,633
Anantapur	90	47	1,69,792	64,372	27,177	1,69,882	91,596
Guntur	142	..	1,06,944	66,307	31,375	1,07,086	97,682
Kurnool, East ..	16,627	8,449	48,715	65,001	33,299	65,342	1,06,749
Do. South ..	638	166	81,988	75,943	38,401	82,626	1,14,510
Do. West ..	24,316	22,674	85,333	96,339	40,039	1,09,649	1,59,052
Total ..	41,933	31,336	5,89,668	4,22,359	1,94,527	6,31,601	6,48,222
Third Circle.							
Cuddapah, North ..	125	..	41,420	63,630	27,911	41,545	91,541
Do. South ..	2,593	475	32,729	77,889	40,920	35,322	1,19,284
Do. West ..	140	..	70,683	60,979	29,122	70,823	90,101
Nellore	69,126	7,451	1,69,897	89,862	39,336	2,39,023	1,36,649
Chingleput	69	12	63,946	53,876	25,188	64,015	79,076
Chittoor	1,588	504	1,34,474	99,912	58,277	1,36,062	1,58,693
Vellore, North ..	830	135	1,24,096	42,000	26,131	1,24,926	68,266
Total ..	74,471	8,577	6,37,245	4,88,148	2,46,885	7,11,716 (a) —10,748	7,43,610
Fourth Circle.							
Vellore, South ..	98,323	8,235	1,26,771	69,299	40,783	2,25,094	1,18,317
Do. West ..	86,300	7,856	70,967	49,125	12,939	1,57,267	69,920
Salem, East	19,700	3,556	1,53,728	69,175	17,332	1,73,428	90,063
Do. North	1,46,985	24,295	47,339	45,490	27,430	1,94,324	97,215
Do. Central ..	10,161	2,433	1,08,221	60,790	15,791	1,18,382	79,014
Do. South	11,833	2,028	1,61,648	72,271	17,039	1,73,481	91,338
Total ..	3,73,302	48,403	6,68,674	3,66,150	1,31,314	10,41,976 (a) — 9,964 (c) — 2,306	* 5,45,867
Fifth Circle.							
Kollegal	35,072	6,732	59,059	57,210	23,470	94,131	87,412
Coimbatore, North ..	2,13,370	26,610	1,27,151	82,029	42,642	3,40,521	1,51,281
Do. South ..	2,31,632	1,71,886	1,21,570	39,083	55,260	3,53,202	2,66,229
Madura	2,242	2,371	1,84,206	72,507	71,333	1,86,448	1,46,211
Tinnevelly ..	1,927	1,945	2,03,541	81,407	48,966	2,05,468	1,32,318
Total ..	4,84,243	2,09,544	6,95,527	3,32,236	2,41,671	(d) 11,79,770 (a) — 2,460	7,83,451
Sixth Circle.							
Mangalore, North ..	20,452	9,923	75,795	49,278	22,846	96,247	82,047
Do. South ..	26,590	56,241	34,133	27,626	22,415	60,723	1,06,282
Wynaad	95,385	80,088	39,611	28,052	28,708	1,34,996	1,31,848
Nilambur	2,69,069	1,07,375	12,947	10,437	44,401	2,82,016	1,62,213
The Nilgiris	73,353	1,55,158	56,596	26,221	48,968	1,09,949	2,30,347
Palghat	70,075	1,66,600	86,727	49,962	1,27,247	1,56,802	3,43,809
Forest research office ..	13	.	13	..	37,345	26	37,345
Total ..	5,54,937	5,75,385	2,85,822	1,86,576	3,31,930	8,40,759 (a) — 1,305	10,93,891 (b) + 2,845
						8,39,454	10,96,736
Grand total, Presidency.	15,67,048	12,78,239	32,64,056	20,44,163	13,63,678	47,93,491	46,88,925

(a) Refunds.
(b) Added as per Accountant-General's audited figures.
(c) Excludes Rs. 2,306 being revenue realized from other circles.
(d) Includes amounts credited in the Nilgiri and South Vellore divisions.
* The figures under total—Receipts do not tally with those given in Form No. 80.

ANNUAL FORM NO. 84.

PART I.

Forest Department, Madras Presidency.

Statement of elephants and other live-stock during 1921–22.

District.	On hand at the commencement of the year.		Number received during the year.	Number disposed of during the year.	On hand at the end of the year.		Total expenditure on maintenance during the year.
	Number.	Value.			Number.	Value.	
(1) ELEPHANTS.							
First Circle.							
Godavari, Upper	2	Rs. 3,700	..	..	2	Rs. 3,700	Rs. A. P. 2,023 14 3
Second Circle.							
Kurnool, West	2	5,000	..	..	2	5,000	2,036 2 2
Third Circle—Nil.							
Fourth Circle—Nil.							
Fifth Circle.							
Coimbatore, South	22	75,500	6	2	26	89,500	19,924 13 11
Sixth Circle.							
Mangalore, South	2	10,000	..	..	2	10,000	2,833 4 7
Wynaad	29	79,900	7	15	21	74,300	23,014 9 5
Nilambur	24	92,000	9	26	7	31,500	(a)26,914 5 9
The Nilgiris	36	76,700	50	9	77	1,82,900	49,487 1 4
Palghat	8	27,300	..	8	..		..
Total ..	99	2,85,900	66	58	107	2,98,700	1,02,199 5 1
Grand Total—Elephants—Presidency.	125	3,70,100	72	60	137	3,96,900	1,26,184 3 5
(2) OTHER LIVE-STOCK.							
First Circle.							
Ganjam	53	1,937	15	24	44	2,231	5,419 12 4
Second Circle.							
Kurnool, West	12	780	..	2	10	715	911 11 1
Third Circle.							
Chingleput	1	35	..	..	1	35	20 0 0
Chittoor	3	122	..	..	3	122	3 0 0
Total ..	4	157	..	..	4	157	23 0 0
Fourth Circle—Nil.							
Fifth Circle.							
Coimbatore, South	64	4,440	9	5	68	5,095	22,200 0 1
Sixth Circle.							
Mangalore, South	12	1,015	..	2	10	845	3,294 8 1
Wynaad	..	..	50	8	42	3,201	4,599 3 2
Nilambur	85	6,196	..	77	8	..	(a) ..
The Nilgiris	11	1,324	12	..	23	(b) 3,369	7,524 6 3
Palghat	40	2,793	72	54	58	4,564	26,927 12 0
Total ..	148	11,328	134	141	141	11,979	42,345 13 6
Grand Total—Other Live-stock—Presidency.	281	18,642	158	172	267	20,177	70,900 5 0

(a) Includes expenditure on maintenance of buffaloes.
(b) Information is not available.

PART II.

Forest Department, Madras Presidency.

Statement of elephants gone off the list during the year 1921–22.

District.	Names.	When purchased or otherwise obtained by Government.	Age.	How disposed of.
		First Circle—Nil.		
		Second Circle—Nil.		
		Third Circle—Nil.		
		Fourth Circle—Nil.		
		Fifth Circle.		
Coimbatore, South.	1. Nandan	Captured on 25th September 1920	YRS. 5	Died on 22nd May 1921.
	2. Ambal	Do. 19th September 1920	25	Do. 21st March 1922.
		Sixth Circle.		
Mangalore, South.	....	....	..	....
Wynaad ..	1. Sampson ..	Purchased 1885	49	Died on 26th Feb. 1922.
	2. Fooh	Born on 17th November 1918	3	Transferred to the Nilgiris.
	3. Haig	Born on 26th November 1918	3	
	4. Ganesh	Captured in 3rd August 1919	10	
	5. Narayani ..	Do. 11th September 1919	10	
	6. Sundar ..	Do. 7th July 1919	4	
	7. Rukmani ..	Do. 22nd December 1919	8	
	8. Mohan	Do. 23rd December 1919	6	
	9. Lilly	Do. 14th October 1918	47	
	10. Paru	Do. 24th February 1921	10	
	11. Kalyani ..	Do. 27th February 1921	3	
	12. Sundari ..	Do. Do.	1	
	13. Rathi	Do. 5th April 1921.	6	
	14. Rahu	Do. Do. ..	7	
	15. Banu	Do. 8th June 1921	2	
Nilambur ..	1. Togo	Captured on 19th June 1905	18	Transferred to the Nilgiris.
	2. Murree	Do. 20th March 1905	24	
	3. Moola Baksh ..	Do. 6th April 1911	21	
	4. Kamala ..	Do. 3rd February 1912	28	
	5. Shankar ..	Do. 21st May 1907	18	
	6. Cæsar	Do. 12th February 1910	16	
	7. Rholly	Do. 17th April 1906	19	
	8. Bhavani ..	Do. 9th April 1913	18	
	9. Jhelum	Do. 27th June 1902	33	
	10. Godavari ..	Do. 12th March 1915	30	
	11. Kurokki ..	Do. 19th February 1905	23	
	12. Libera	Do. 7th March 1909	28	
	13. Norah	Do. 12th March 1906	24	
	14. Sita	Do. 13th September 1895	32	
	15. Kuttiparu ..	Do. 25th August 1907	22	
	16. Sutlej	Do. 27th February 1902	31	
	17. Tamburatti ..	Do. 3rd February 1913	22	
	18. Sirdar	Do. 7th August 1906	21	
	19. Jhelum	Captured in January 1886	44	
	20. Jamperi ..	Purchased in March 1903	47	
	21. Padmini ..	Captured on 10th February 1896	53	
	22. Damayanti ..	Do. 21st January 1915	31	
	23. Savitri	Do. 14th May 1912	42	
	24. Forester ..	Do. 16th March 1906	22	
	25. Dostijehan ..	Born on 3rd February 1902	20	Died on 14th Feb. 1922.
	26. Tara	Captured on 19th January 1921	1	Joined the wild herd.
The Nilgiris.	1. Norah	Captured on 12th March 1906	24	Transferred to Nilambur on 13th May 1921.
	2. Moyar	Born on 28th November 1919	2	Died on 22nd May 1921.
	3. Cæsar	Captured on 12th February 1910	17	Transferred to Wynaad.
	4. Banu	Do. 8th June 1921	2	Died on 15th Nov. 1921.
	5. Kalyani ..	Do. 27th February 1921	3	Died on 30th Jan. 1922
	6. Lilly	Do. 14th October 1918	47	Died on 8th Feb. 1922.
	7. Nakula	Do. 18th June 1921	8	Died on 27th March 1922.
	8. Sukumara ..	Captured in infancy on 1st February 1922 ..	..	Died on 13th Feb. 1922.
	9. Calf of Parvatie.	Born on 2nd January 1922	..	Died on 19th Jan. 1922.
Palghat ..	1. Murree ..	Captured on 20th March 1905	24	Transferred to Nilambur in May 1921.
	2. Shankar ..	Do. 21st May 1907	18	
	3. Kamala ..	Do. 3rd February 1922	28	
	4. Moola Baksh ..	Do. 6th April 1911	24	
	5. Kurokki ..	Do. 19th February 1905	23	
	6. Togo	Do. 19th June 1905	18	
	7. Cæsar	Do. 12th February 1910	16	
	8. Rholly	Do. 17th April 1906	19	

ANNUAL FORM No. 85.

Forest Department, Madras Presidency.

Abstract showing the value of stores, tools and plant for 1921–22.

District.	Buildings.				Stores				Tools				* Difference in value.	
	On hand at the commencement of the year.		On hand at the end of the year.		On hand at the commencement of the year.		On hand at the end of the year.		On hand at the commencement of the year.		On hand at the end of the year.			
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	In favour of the year.	Against the year.
First Circle.		Rs.		Rs.		Rs.		Rs.		Rs.		Rs.	Rs.	Rs.
Direction ..	1	400	1	400	371	4,357	369	4,350	372	4,757	370	4,750	..	7
Ganjam ..	122	47,239	123	50,938	4,398	6,910	4,803	11,152	4,520	54,149	4,926	62,090	7,941	..
Vizagapatam ..	62	10,641	66	13,466	1,724	4,343	1,768	4,486	1,786	14,984	1,834	17,952	2,968	..
Godāvari, Upper.	128	33,449	126	38,430	3,564	13,247	3,652	15,183	3,692	46,696	3,778	53,613	6,917	..
Godāvari, Lower.	157	45,250	157	45,250	2,281	4,820	2,341	5,348	2,438	50,070	2,498	50,598	528	..
Kistna ..	36	5,706	36	6,656	1,824	13,954	2,257	17,607	1,860	19,660	2,293	24,263	4,603	..
Total ..	506	1,42,685	509	1,55,140	14,162	47,631	15,190	58,126	14,668	1,90,316	15,699	2,13,266	22,950	7
Second Circle.														
Direction ..	..	..	..	..	20	481	231	7,084	20	481	231	7,084	6,603	..
Bellary ..	40	45,597	38	41,578	3,242	13,258	3,688	14,667	3,282	58,855	3,726	56,245	..	2,610
Anantapur ..	32	47,676	32	50,629	2,850	5,763	3,593	5,974	2,882	53,439	3,625	56,603	3,164	..
Guntūr ..	27	12,155	28	14,215	2,701	7,299	6,037	9,653	2,728	19,454	6,065	23,868	4,414	..
Kurnool, East.	91	70,180	82	72,292	(a) 4,082	11,076	3,996	11,800	(a) 4,173	81,256	4,078	84,092	2,836	..
Do. South.	70	52,208	68	51,802	2,564	7,665	2,555	7,702	2,634	59,873	2,623	59,504	..	369
Do. West.	70	91,817	67	93,795	4,257	21,692	4,474	23,068	4,327	1,13,509	4,541	1,16,853	3,344	..
Total ..	330	3,19,633	315	3,24,311	19,716	67,234	24,574	79,938	20,046	3,86,867	24,889	4,04,249	17,382	..
Third Circle.														
Direction ..	..	..	..	..	337	1,788	319	3,802	337	1,788	319	3 802	2,014	..
Cuddapah, North.	47	21,145	47	22,784	1,497	3,528	1,513	4,520	1,544	24,673	1,560	27,304	2,631	..
Cuddapah, South.	53	36,218	54	52,085	1,844	8,539	2,669	10,631	1,897	44,757	2,723	62,716	17,959	..
Cuddapah, West.	34	14,046	34	13,276	1,869	7,356	2,276	6,121	1,903	21,402	2,310	19,397	..	2,005
Nellore ..	50	29,001	47	26,463	56,005	43,824	39,640	39,139	56,055	72,825	39,687	65,602	..	7,223
Chingleput ..	25	10,861	26	15,635	2,348	3,687	2,436	3,807	2,373	448	2,462	19,442	4,894	..
Chittoor ..	41	30,565	47	33,713	4,016	10,648	4,112	11,621	4,056	41,213	4,159	45,334	4,121	..
Vellore, North.	37	19,438	36	19,799	1,549	4,514	2,501	4,975	1,586	23,952	2,537	24,774	822	..
Vernacular Training School.	..	..	..	..	668	1,166	670	1,644	668	1,166	670	1,644	478	..
Total ..	287	1,61,274	291	1,83,755	70,132	85,050	56,136	86,260	70,419	2,46,324	56,427	2,70,015	23,691	..
Fourth Circle.														
Direction ..	..	..	..	..	220	1,753	225	1,681	220	1,753	225	1,681	..	72
Vellore, South.	53	41,555	49	39,716	2,404	5,843	2,403	5,663	2,457	47,398	2,452	45,379	..	2,019
Do. West.	(b) 36	2,8785	38	30,029	2,751	7,611	2,878	6,065	2,787	36,396	2,916	36,094	..	302
Salem, East ..	62	33,588	61	31,111	2,205	13,836	2,721	14,048	2,267	47,424	2,782	45,159	.	2,265
Do. North..	58	26,175	57	29,670	2,854	32,822	2,257	30,325	2,912	58,997	2,814	59,995	998	..
Do. Central.	69	54,621	71	53,103	2,686	15,106	2,743	12,563	2,755	69,727	2,814	65,666	..	4,061
Do. South..	54	30,841	55	33,795	4,768	9,828	5,061	10,220	4,822	40,669	5,116	44,015	3,346	..
Vernacular Training School.	..	..	..	..	996	1,990	946	4,356	996	1,990	946	4,356	2,366	..
Total ..	332	2,15,565	331	2,17,424	18,884	88,789	19,284	84,921	19,216	3,04,354	19,565	3,02,345	..	2,009
Fifth Circle.														
Direction ..	1	54	1	52	427	3,924	388	3,664	428	3,978	389	3,716	..	262
Kollegal ..	34	20,591	43	33,298	20,417	5,662	50,764	5,805	20,451	26,253	50,807	39,103	12,850	..
Coimbatore, North.	77	95,427	92	1,01,867	2,656	10,637	2,392	10,153	2,733	1,05,964	2,484	1,12,025	6,056	..
Do. South.	71	55,389	71	53,299	25,350	48,799	23,465	49,594	25,421	1,04,488	23,536	1,02,893	..	1,595
Madura ..	124	1,02,769	126	1,06,670	3,231	6,029	3,194	4,778	3,355	1,08,798	3,320	1 11,448	2,650	..
Tinnevelly ..	113	62,338	109	55,856	1,776	4,431	1,769	5,709	1,889	56,769	1,878	61,565	4,796	..
Vernacular Training School.	..	..	..	..	539	2,190	484	2,346	539	2,190	484	2,346	156	..
Working Plans Office.	..	..	..	..	256	1,503	256	1,503	256	1,503	256	1,503	..	..
Total ..	420	3,26,868	442	3,51,042	54,652	83,075	82,712	83,552	55,072	4,09,943	83,154	4,34,594	24,651	..
Sixth Circle.														
Direction ..	..	..	..	..	..	..	173	4,702	..	..	173	4,702	4,702	..
Mangalore, North.	51	29,100	51	29,800	(c) 808	4,979	765	4,770	(c) 859	34,079	816	34,570	491	..
Do. South.	29	26,625	35	34,875	871	3,671	873	4,262	900	30,296	948	39,137	8,841	..
Wynaad ..	89	55,909	94	68,514	2,504	6,310	2,646	9,747	2,593	62,219	2,739	78,261	16,042	..
Nilambur ..	(d) ..	..	..	..	..	..	..	..	..	..	..	..	..	..
The Nilgiris ..	74	38,621	76	39,723	2,613	10,492	2,646	12,053	2,687	49,113	2,722	51,776	2,663	..
Palghat ..	(e) 45	26,351	50	16,747	2,031	22,313	2,990	94,543	2,076	48,664	3,040	1,11,290	62,626	..
The Forest Research officer.	(f) 3	760	8	732	228	5,248	182	3,580	231	6,008	185	4,312	..	1,696
Total ..	291	1,77,366	309	1,90,391	9,055	53,013	10,274	1,33,657	9,346	2,30,379	10,583	3,24,048	95,365	1,696
Grand total, Presidency.	2,166	13,43,391	2,197	14,22,063	2,86,601	4,24,792	2,08,120	5,26,454	1,88,767	17,71,183	2,10,317	19,47,517	1,80,337	..

* Difference between the closing balance of 1920–21 and the present opening balance is due to the adoption of correct figures furnished by the District Forest Officer. (a) *East Kurnool.*—The difference between the closing balance of previous year and the opening balance of this year is due to the adoption of correct figures furnished by the District Forest Officer. (b) The difference in the number of buildings in the opening balance is due to grouping of 10 separate buildings into 3 joint buildings. (c) Revised figure furnished by the District Forest Officer. (d) The statement has not been furnished by the District Forest Officer as the records were all destroyed in the Mappilla rebellion. (e) Includes buildings and stores of the Mettupalaiyam range transferred to North Coimbatore division and includes those of the Bannerghat range transferred from the Nilambur division. (f) Figures furnished by the Forest Research Officer.

Government of Madras

DEVELOPMENT DEPARTMENT

G.O. No. 1478, 4th November 1922

Administration Report—Forest Department—1921-22—Reviewed.

READ—the following:—

Proceedings of the Chief Conservator of Forests No. 39, dated 14th September 1922.

H. TIREMAN, Esq.,
Acting Chief Conservator of Forests.

I have the honour to submit the progress report of Forest Administration in the Madras Presidency for the year ending 31st March 1922.

2. The present report covers a period of 12 months from 1st April 1921, and as the report for 1920-21 related to a period of nine months only, comparison of the results of the past year's working with those of the period preceding it will be of little value.

In the following remarks, I propose to review briefly the more important results of the Administration.

CONSTITUTION OF STATE FORESTS.

ALTERATION IN AREA.

3. Eighty-four square miles of reserved lands were finally settled under the Forest Act and 47 square miles were disforested in order to provide for the extension of cultivation chiefly in Guntūr (10 square miles), Vellore North (5 square miles), Salem East (14 square miles) and Palghat (9 square miles). The net result was an increase of 37 square miles in the area of the reserved forest which at the end of the year amounted to 18,863 square miles. The area of reserved lands, owing to the operation of forest settlement, decreased from 501 to 441 square miles.

FOREST SETTLEMENT.

4. Of the 84 square miles constituted as reserved forests during the year, 75 square miles were in the Lower Gōdāvari division. Two hundred and fifty square miles in the Nugur taluk of the Bhadrachalam Agency were settled during the year, but reservation took effect only after the close of the year. Settlement operations in respect of 144 square miles, 75 of which are situated in the Nilgiri district, were in progress at the close of the year.

DEMARCATION.

5. About 162 miles of boundaries were demarcated during the year chiefly in Lower Gōdāvari, Bellary, Guntūr and Madura at a cost of Rs. 7,224. Seven hundred and fifty-three miles remained to be demarcated at the close of the year principally in South Salem, Kollegal, North Coimbatore and Madura. This figure includes 242 miles in Madura omitted from the previous year's return. Want of funds prevented the resurvey of boundaries in the Nilgiris referred to in last year's report.

FOREST SURVEYS.

6. The survey of India Party worked in West Cuddapah where an area of about 44 square miles was surveyed on the scale of 2" to the mile, in Madura where the reserves in the Palni and Sholavandan ranges were resurveyed, and on the verification of a portion of the Mysore-Malabar boundary.

MANAGEMENT.

Working Plans.

7. Some progress was made in the preparation of simple working schemes for the extraction of fuel, small timber and bamboos. Regular working plans for the large timber forests must await the formation of an engineering branch of the department. The question of revising the figures relating to working plans referred to in last year's report appears to have been overlooked; the figures are still misleading.

Roads and Communications.

8. Two hundred and seventy-nine miles of new roads were constructed at a cost of Rs. ·96 lakh and 1,267 miles were repaired at a cost of Rs. 1·06 lakhs. Government have ordered that the scheme of road development in the Javadi Hills should be limited to the completion of two roads only, viz., the Amerdi-Nadanur road and the Komattiyeri-Patrakad road; the expenditure on these two works during the year under review was Rs. 10,029 and Rs. 5,104 respectively. The construction of the new Mount Stuart Ghat road at a cost of Rs. 2·02 lakhs was sanctioned but owing to delay on the part of the contractor the expenditure during the year amounted only to Rs. 21,437 against the allotment of Rs. 60,000. In connexion with the exploitation of the Chenat Nair forest the construction of the road leading to the Sappal station was completed at a cost of Rs. 17,494.

Buildings.

9. The most important works undertaken during the year were the saw-mill buildings at Russellkonda, the buildings (rest-house, subordinates' quarters and coolie lines) in the Chenat Nair forest and the circuit house at Nilambur. The first named was completed, Rs. 23,593 were spent on the partial construction of the buildings in Chenat Nair and the Nilambur circuit house was completed at a cost of Rs. 13,847, only to be burnt by the Mappillas almost immediately afterwards. Miscellaneous building works, such as inspection bungalows, range offices, rangers' quarters and subordinates' lines, were carried out in various parts of the Presidency. The total expenditure on buildings amounted to Rs. 2·52 lakhs against Rs. 1·87 lakhs during the previous nine months.

Other Works.

10. A sum of Rs. 12,337 was spent on the construction and repairs of tanks and wells and on the improvement of water-supply in the forests. It is hoped that the problem of the Mount Stuart water-supply in South Coimbatore will shortly be solved as an excellent perennial spring has been discovered.

The question of improving grazing grounds is now engaging the attention of Government.

LIVESTOCK.

Elephants.

11. The number of elephants in charge of the department at the beginning of the year was 125, including four baggage elephants working in Gōdāvari and Kurnool. Twenty-two elephants were captured, two were born in captivity, 11 died and one ran away at the outbreak of the Mappilla rebellion, the net result being a stud of 137 at the end of the year, with a book value of Rs. 3,96,900.

Capturing operations were conducted in South Coimbatore, Wynaad and the Nilgiris and resulted in 22 captures, viz, 11 in the Nilgiris, 6 in Wynaad and 5 in South Coimbatore. There was one accidental death due to capture. The number of captures would probably have been larger if it had been possible to carry on operations in Nilambur division, but this was out of the question owing to the Mappilla rebellion. The cost of the operations in the Nilgiris was Rs. 3,205 and in Wynaad Rs. 1,720. The cost incurred in South Coimbatore division has not been reported. Two captures in Nilambur and Wynaad were due to the ingenuity of the local rangers. In each case a wild tusker had been giving trouble to the tame elephants and coolies working in the neighbourhood. Two pits were dug and tame

females tied up close to them with the result that the wild tuskers fell into the pits. These two animals are probably worth Rs. 8,000 and were captured at a cost of something under Rs. 100.

Cattle.

12. A stud of 281 bullocks and buffaloes was maintained during the year. Thirty-two died, 75 were butchered by the Mappillas during the rebellion, 13 were transferred to the account of the saw-mill at Russellkonda and 106 were added by purchase. The stock at the end of the year stood at 267 with a book value of Rs. 20,177.

FOREST CONSERVANCY.

General Protection.

13. Organised defiance of the forest law brought about by the non-co-operation compaign rendered forest protection impossible for a time in the Guntūr district where 58 cases of assault on forest officials occurred. There was much lawlessness also in the Gōdāvari, Kistna, Cuddapah, Nellore, Chittoor and North Vellore divisions, in the last of which three forest guards were murdered.

Unlicensed cattle seized in the forests were forcibly rescued, cairns marking the forest boundaries were destroyed and much damage was done to the forest growth. One curious development of the movement is reported from Salem (South) where the villagers were deluded into the belief that the receipts for collections made for the Congress gave them the right to graze in the reserves adjoining their villages. The Mappilla rebellion, though not directly connected with the Forest Department, resulted in very considerable loss. All the principal forest buildings in the Nilambur division were looted and burnt, records were destroyed and work was dislocated for six months, rendering it impossible to float any timber down to the coast or to carry out the annual fellings. It is impossible to assess with any accuracy the loss attributable to the activities of the non-co-operators and to the Mappilla rebellion. In Guntur a special magistrate was appointed temporarily for the prompt disposal of forest cases and an Assistant Conservator of Forests was posted to Palnad to work in conjunction with the punitive Police with a view to secure obedience to the forest laws. In the Cuddapah district punitive Police under the command of a forester are reported to have had an excellent effect.

Breaches of the Forest Act.

14. The following table compares the forest offences of all kinds reported during the year with those of the previous nine months:—

—	Injury to forests by fire.		Unauthorised felling.		Unauthorised grazing.		Other offences.		Total.		Average of three years ending 1920-21.
	1920-21.	1921-22.	1920-21.	1921-22.	1920-21.	1921-22.	1920-21.	1921-22.	1920-21.	1921-22.	
Cases taken to Court.	26	25	4,288	5,356	1,873	1,776	333	383	6,520	7,540	6,665
Cases recommended for composition.	29	37	10,343	13,610	4,950	5,134	734	810	16,116	19,591	17,755
Cases undetected.	905	1,349	343	493	46	45	17	22	1,311	1,909	1,461
Total ..	960	1,411	14,974	19,459	6,869	6,955	1,144	1,215	23,947	29,040	25,881

Unauthorized felling as usual forms the largest head of forest crime throughout, the Fourth Circle contributing nearly 31 per cent of the total. Grazing offences were again comparatively numerous in the Third Circle which contributed 36 per cent of the total number. Nearly 71 per cent of the cases that remained undetected related to offences connected with injury to forest by fire.

Of the 27,503 cases disposed of during the year (including the pending cases of the previous year), 8,465 were dealt with by magistrates, 17,061 were compounded and 1,977 cases were withdrawn. Of the cases disposed of by magistrates, 7,394 ended in conviction and 1,071 in acquittal. The percentage of failure in the cases

brought to trial was 12·6 per cent. It was highest in the Third Circle where out of 2,269 cases taken to Court, 24 per cent ended in acquittal: this large percentage of failure has not been explained. The total amount of compounding fees was Rs. 2,29,633. The average compounding fee paid in respect of 17,061 cases was Rs. 13–7–4 as against Rs. 12–13–0 in the previous year.

Fire Protection.

15. In 258 square miles of reserves in Upper Gōdāvari and 1,197 in three Kurnool divisions, 10 in Kollegal and 20 in North Coimbatore, the system of early burning under departmental supervision was continued with satisfactory results. This system consists of setting fire to the grass as soon as it is dry enough to burn, the resulting fire being much less severe than if it occurred later in the season and doing very little damage; the cost of the work is appreciably less than that of the orthodox system of attempting to prevent fires. As regards the Sixth Circle, the Conservator states that it was decided to introduce this system in portions of the Nilgiris, Wynaad and South Mangalore divisions during 1922 and the work was commenced towards the end of 1921.

Protection from fire in Cuddapah is still unsatisfactory and the question of changing the present system and introducing early burning is now engaging the attention of the local officers.

The total area over which special protection was attempted during the year was 5,844 square miles; 407 square miles (7 per cent) being burnt. This result is fairly satisfactory.

SUPPLY.

Timber.

16. The output of timber during the year under review was 108,400 tons against 98,450 tons in the previous year. Twenty thousand eight hundred and twenty-five tons were extracted by departmental agency and 81,675 tons by purchasers.

About four thousand cubic feet of timber chiefly Terminalia tomentosa were sent to Messrs. Howard Brothers, London, but the prices obtained were considerably lower than we had been led to expect. The timber appears to vary very considerably in the qualities desired by the furniture trade and this is a matter which requires further investigation.

Seven hundred tons of miscellaneous timber, consisting chiefly of species unknown to the market, were extracted and sent to the Kolar Gold Field, the authorities there having agreed to test their suitability for mining purposes; it was found that only certain species were suitable. A fresh arrangement was made during the year under which certain species only are to be supplied at various prices.

Fuel.

17. Forty-nine thousand three hundred and sixteen tons of fuel were removed departmentally and 273,950 tons by purchasers. Prices of fuel in the large towns showed a tendency to increase due either to increased wages and transport charges or short supplies or to both. The prices were highest at Anantapur (Rs. 22–4–0 per ton), Tanjore (Rs. 22–8–0 per ton), Trichinopoly (Rs. 23 per ton) and Madura (Rs. 24–1–0 per ton).

Bamboos.

18. The total receipts for the year under review were Rs. 3·21 lakhs against Rs. 2·64 lakhs in the previous nine months.

Sandalwood.

19. In the auction sale held at Satyamangalam in December last, 218 tons of sandalwood were sold for Rs. 2,48,425, while in the sales held at Tirupattur and Vellore in November and December, 303 tons were sold for Rs. 3,56,913. The total average price secured was Rs. 1,160 against Rs. 1,599 per ton in the previous year. The sandalwood market is a very uncertain one.

Grazing.

20. About 21 per cent of the total area of forests in the Presidency was closed to grazing either wholly (16 per cent) or for part of the year (5 per cent) against 23 per cent in the previous year. The decrease in the closed areas occurred chiefly in the districts of Kurnool East, Kollegal and Wynaad. In Kurnool East all the reserved forests were thrown open to grazing on account of scarcity of fodder, and 57 square miles in Kollegal and Wynaad were thrown open to grazing as there appeared to be no good reason for closing them. In Guntūr all the reserves which were closed to grazing from March to July are now thrown open for grazing throughout the year and Government have ordered that the old restriction should not be reimposed until further orders.

To the open area of over 16,000 square miles permits were issued for the grazing of 1,708,124 animals against 2,018,083 animals, yielding an incidence of 6·01 acres per animal against 4·71 acres in the previous year. These figures do not include 76,865 animals which were allowed free grazing, and if these are also taken into account, the incidence works out to 5·75 acres per animal. The decrease in incidence is partly due to the policy which has been steadily pursued in recent years of enhancing grazing fees in order to restrict grazing to the more valuable cattle needed for agricultural purposes; it is also possibly due in part to the refusal to take out permits in the districts most affected by the non-co-operation movement. The incidence is still high in some forests where it is below one acre to the cow unit. Inaccessible areas or areas in which there is really no grazing and which are not therefore resorted to have not been taken into account in calculating the average possibility.

The revenue realized from grazing and fodder grass was Rs. 7,89,731 against Rs. 8,16,589. The kancha system of grazing was continued in Nellore and Chingleput. In Chingleput protection of kanchas was on the whole satisfactory; in Nellore a number of kanchas remained unsold owing to non co-operation.

Hay.

21. The Military Farms department confined its operations during the year to Bellary, Anantapur, Kurnool South, Kurnool West and North Vellore and removed 2,834 tons of baled hay, paying seigniorage to the department at Rs. 2 per ton.

Nux-vomica.

22. There was a serious fall in the price of this produce, and in most districts the lessees failed to pay their dues and their contracts were cancelled. In more than one case which came to my notice the lessees had under-estimated the difficulty of preventing unauthorized people from collecting and selling the produce.

Mohwa flowers.

23. After providing for distillation and domestic consumption by the Khonds, it is estimated that the quantity of this produce available for export will not exceed 2,000 tons which is insufficient for commercial purposes. We cannot therefore look for much revenue from this source.

Paper pulp.

24. The extension of the flowering of the bamboo mentioned in last year's report makes it useless to investigate this subject at present.

Removal of forest produce by right holders and free grantees.

25. The estimated value of forest produce removed by right holders or free grantees amounted to Rs. 56,028 against Rs. 52,337 in the previous year.

SYLVICULTURE.

General.

26. The chief sylvicultural problems with which the department has to deal are those connected with the regeneration of the deciduous teak forests, the evergreen forest of the Western Ghats, and the Sal forests of Ganjam. It is now more or less universally recognized that the only efficient method of regenerating teak forests is

by clear-felling followed by sowing or planting, and considerable progress has been made in converting by this method the degraded forests at Mount Stuart in South Coimbatore where 26 acres were sown with teak in the year and 133 acres cleared for sowing during the current year. The method has also been introduced into the valuable teak forests of the Wynaad where some 85 acres were clear-felled. In the evergreen forest the goal to be aimed at is the removal of the entire crop in one year as, if exploitation is spread over more than one year, it is impossible for modern logging machinery to work economically. These forests contain, as a rule, a prolific crop of young seedlings and if advantage is to be taken of this fact, it is impossible to carry out orthodox clear fellings; that is to say, suddenly to remove the overhead cover, as experience has shown that the result of doing so is the death of the young crop. It is thought that the difficulty can be got over by girdling and so killing a proportion of the mature crop during the first year and thus stimulating the growth of the young crop by the admission of a moderate quantity of light, the reminder of the old crop being felled as soon as the young seedlings have become established, i.e., are strong enough to stand complete exposure to the light. It was intended to carry out the work on these lines in the Chenat Nair forest in varying degrees of intensity in order to ascertain what proportion of the crop can be girdled in the first year and how long it is necessary to keep the rest of the crop standing to provide shelter, but the District Forest Officer has had so much work to do in connexion with the construction of roads and buildings and general exploitation that he has not had sufficient time to devote to experimental work on these lines. On the whole the young seedlings have not suffered from exposure of light even where fellings have been more or less severe during the first year, and it is hoped that the whole operation can be completed in two years; the result of this would be that the whole crop could be felled at one operation. Sowing of Hopea parviflora, a valuable evergreen species has been carried out during the last two years in South Kanara on a considerable scale, some 2,300 acres having been sown; the result has been markedly successful. A certain amount of shade is necessary for raising a crop of this species, but the quantity of shade required is not great and it is possible that the best solution of the problem of regenerating the evergreen forest will be found in clear felling, leaving the land fallow for say two years, and then introducing Hopea under the shade of the re-growth which by that time should have sprung up sufficiently to provide cover.

The regeneration of the Sal forests in Ganjām is a comparatively simple matter and the question of the best means of regeneration to adopt may be said to have been solved by the adoption of clear felling; no sowing or planting in this case is necessary as a prolific crop of young Sal springs up after the old one has been removed.

In the Nilambur division, the Mappilla rebellion seriously interfered with the work of regenerating the areas which had been felled, as it was impossible to carry out any weeding or tending; the young crop however has not suffered as much as might have been anticipated. The worst portions were burnt and re-sown.

Research and Experiments.

27. Mr. J. M. Sweet, Assistant Conservator of Forests, took over charge of the post of Forest Research Officer from Mr. K. R. Venkataramana Ayyar at the end of February 1922. Experimental work was continued in the Sixth Circle: it consisted of nursery experiments to ascertain the period during which seeds (chiefly of the evergreen species) retain their power of germinating and treatment of seed. Further study was devoted in South Kanara to the behaviour of young Hopea crops after exposure to varying degrees of light. At and near Nilambur experimental under-planting of Hopea parviflora and Artocarpus hirsuta under the young teak crops was continued, but owing to the Mappilla rebellion it was impossible to tend the seedlings and in most cases they have disappeared. On a recent visit, however, I found that a fair number of Hopea seedlings have survived and were growing well, the best results being in a plantation where the teak was ten years old when the Hopea was sown. The second bulletin on research was issued early this year giving details of the work done in 1920–21.

DEVELOPMENT.

28. The Russellkonda saw-mill was completed during the year and in the Chenat Nair forests two Holt five ton Caterpillar Tractors were purchased. The work of constructing roads and buildings in the lastnamed locality was practically completed during the year and it is hoped that considerable progress will be made in exploitation during the current year; but experience has shown that efficient exploitation is impossible without a specially trained staff. Government have sanctioned the appointment of a Chief Forest Engineer and since the close of the year under report proposals have been submitted for the formation of an Engineering branch of the department.

FOREST PANCHAYATS.

29. With some notable exceptions chiefly in the Fifth Circle, the work of panchayats has been more or less unsatisfactory. Since the close of the year a new organization for the management of panchayats has been formed to work directly under the Chief Conservator.

FINANCE.

30. The total gross revenue during the year amounted to Rs. 47·97 lakhs against Rs. 46·16 lakhs in the previous nine months. The expenditure under A. Conservancy and Works and B. Establishments amounted to Rs. 48·42 lakhs. The result is a deficit of Rs. ·45 lakh as compared with a surplus of Rs. 11·94 lakhs during the previous year. The Fourth and Fifth Circles show a surplus of Rs. 4·88 lakhs and Rs. 3·92 lakhs, respectively: in the remaining circles, the expenditure exceeded the receipts. The deficit is due to the heavy expenditure incurred during the year on development and to increased salaries and travelling allowances. About Rs. 3·66 lakhs were spent on the Russellkonda saw-mill and about Rs. 1·33 lakhs on the purchase of tractors and tools, and the construction of roads and buildings in the Chenat Nair forest.

ADMINISTRATION.

General.

31. With a view to keep the Government in touch with non-official opinion in regard to forest policy a Forest Advisory Committee was formed consisting of non-official members of the Legislative Council presided over by the Honourable Member in charge of the Forest portfolio.

In furtherance of the policy of enlisting public opinion in measures of local forest conservancy, a committee was appointed by Government to inquire into forest grievances in the Coimbatore district. The Government accepted their recommendations and effect is being given to them. Another conference of certain gentlemen of South Kanara including the permanent Chief Conservator and the local forest officers was held at Mangalore on 9th December 1921 to discuss forest grievances, and action has been or is being taken on the several matters discussed. In Guntur Mr. Cox held an inquiry into local forest grievances under the orders of Government with the assistance of two members of the Legislative Council of the district: Government have recently passed orders on the Chief Conservator's report to the effect that the scale of grazing fees should be reduced, that the forest reserves should be thrown open to grazing throughout the year instead of for seven months, and that the problem of accelerating the rate of progress in the disforestation of land which is more valuable for cultivation than for grazing should engage the close attention of the Special Forest Officer and the District Revenue authorities.

Madras Forest Service.

32. Government have passed orders on the memorials of the Madras Forest officers and have sanctioned a revised scale of pay, viz., Rupees 250—25—900 (with efficiency bar at Rs. 600) with effect from 1st January 1922. All Extra Assistant Conservators who were permanent on 28th February 1922 were given three advance increments.

FOREST COLLEGE.

33. Mr. C. C. Wilson acted as the Principal of the college throughout the year. Of the 35 students who passed out of the college in June 1922, six were from Bombay, four from the Central Provinces, one from the Rewa State, one from Keonjihar, five from Ceylon two from Coorg, two from Hyderabad and fourteen from Madras (two private students and twelve Government stipendiary students). Five students were granted Honours certificates, fifteen obtained Higher Standard certificates and fifteen Lower Standard certificates. There were no failures.

The college sustained a great loss in the death on 29th March 1922 of M.R.Ry. M. R. Sundaram Ayyar, B.A., Extra Assistant Conservator, an efficient and popular Instructor.

VERNACULAR TRAINING SCHOOLS.

34. Four schools were held and the Conservators testify to the good work done in training students. Five Oriya students from Bihar and Orissa were trained in the school at Russellkonda in the Ganjam district. The opening of two additional schools was deferred in the interests of economy.

(True extract)

H. TIREMAN,
Acting Chief Conservator of Forests.

To the Secretary to Government, Development Department.

Order—No. 1478, Development, dated 4th November 1922.

Recorded.

2. The report under review covers a period of twelve months ending 31st March 1922; the figures and statistics reported are consequently not easy of comparison with those in the preceding report, which only related to a period of nine months.

3. The prevailing political unrest was markedly displayed during the year under report in connexion with the forest administration and is to some extent responsible for the unsatisfactory financial results of the year's working. The campaign for non-co-operation was directed to organizing deliberate defiance of the forest laws in numerous districts, particularly the central and northern areas of the Presidency; and ignorant villagers were incited, not merely to refuse obedience to the laws, but to offer lawless and forcible resistance to the forest staff, which resulted in more than one forest district, in the murder of Government subordinates who attempted to do their duty. Extensive damage was done to the forests in these areas, cattle were driven in large numbers to graze without licence and when seized were forcibly rescued. An interesting light is thrown upon the methods adopted by those responsible for this agitation, in the fact, which is noted by the Chief Conservator, that in one district, where collections had been made for the support of these political movements, the villagers were led to suppose that the receipts granted to them covered also the right to graze in the reserves adjoining their villages. In the Sixth Circle the Mappilla rebellion has been responsible for extensive loss to Government in the Forest Department both direct and indirect. In the Nilambur division all the principal forest buildings were destroyed altogether with the records, while the work of extracting teak from Nilambur, which is usually a lucrative branch of the department's activities, was found impossible for half the year.

4. In reviewing the administration for 1920-21 allusion was made to the need for systematic exposition of the aims and objects of forest conservation and to the creation of a standing committee of the Legislative Council as an agency of special value for the purpose of dispelling misconceptions and of fostering the spirit of co-operation with the department. The Government have much satisfaction in recording that the efforts which have been made to secure these ends during the year under review, have been continued and promise to yield results of increasing value as time goes on. Not only have the Government been sensible of the benefits

of the discussion of forest matters with the advisory committee, but also, during the year under report, the Chief Conservator has had the opportunity of investigating, in association with Members of the Legislative Council, various forest grievances on the spot, both in the Coimbatore and in the Guntur districts. In the former district an extensive tour was carried out by the special committee, grievances were discussed with the villagers on the spot; the main conclusions of the committee have been accepted by the Government and steps have been taken to give effect to them. The tour of the committee appointed for the Guntur district had unfortunately to be curtailed owing to the unsettled condition of the district as a consequence of the agitation already referred to. But the Chief Conservator was able, as a result of his tour, to make certain important recommendations to Government with the object of meeting some of the grievances complained of. The Government have since issued orders on the Chief Conservator's recommendations and a special inquiry has been in progress, the results of which have still to be considered, with the object of devising satisfactory and lasting remedies.

5. The question of instituting a more forward policy in respect of the development and exploitation of the very valuable ever-green forests in the Presidency has received the careful attention of the Government during the period under review. The general result of the examination of the subject has been to convince the Government that, while the Presidency possesses in these forests a property whose present and potential value can scarcely be estimated too highly, it would be neither prudent nor economical to enter upon its development without obtaining the most skilled assistance available and without the employment of the most up to date methods of lumbering and forest engineering. The experience of the last year or two, when a small beginning has been made in exploitation by more up to date methods than had hitherto been attempted, has confirmed this conviction; and, while taking steps to secure the services of a thoroughly qualified and expert adviser in the person of Mr. C. S. Martin, at present Consulting Forest Engineer to the Government of India, it was decided, at the close of 1921–22, to suspend the inception of any large new exploitation schemes until the Forest Department should have been equipped with a proper staff of expert advisers. This decision was reached at the close of the year under report, after the fullest discussion with the Finance Committee of the Legislative Council, and in Council itself, and has been given effect to in the estimates for the current year. Of the two schemes of exploitation which were already on foot during the year under report, namely, the Chenat Nayar and Russellkonda Saw Mill schemes, the construction of the latter was only completed at the end of the year, while the Chenat Nayar scheme has still to develop beyond the initial and experimental stage. The question of placing the accounts of these undertakings upon a commercial basis, which had been taken up in the year 1920–21 has been examined by a commercial accountant, specially deputed for the purpose from the staff of the Auditor-General, and the Government hope that from the current year it will be possible to present the balance sheet, and profit and loss statements of these concerns in a form which will clearly indicate their financial success or otherwise.

6. The Government regret to notice from the Chief Conservator's report that during the year 1921–22 little progress was made in the work of forming panchayats of villagers for the management of reserves. The policy of the Government in this matter is to encourage the formation of such panchayats to the greatest extent possible with the object, not only of encouraging a spirit of self-help and co-operation among villagers, but also, of relieving the Forest Department of the ungrateful task of conserving extensive areas which, however valuable they may be to the villager for every day purposes, for grazing, for supplying leaf manure and other requirements of the agriculturist, are yet, from the strictly forest point of view, not of great value. It was decided at the close of the year under review, with the support of the Forest Committee and with the consent of the Legislative Council, to embark upon a more active policy in the matter of forming new village panchayats and of affording assistance and guidance to those already existing; and with this object the Government have since appointed a special staff entrusted with this duty. They believe that, given time and patience, most valuable results in this direction may be achieved. Under this head the Government have read with interest the account

which is given by the Conservator, Third Circle, of the successful experiment which has been made in the leasing of a fuel coupe to a co-operative society, which it is stated, has not only made profit itself, but has incidentally reduced the sale price of fuel in the town of Vellore. Government trust that further efforts will be made elsewhere to apply co-operative methods to forest undertakings, wherever the conditions are favourable.

7. The improvement of grazing lands is a matter which has several times come up for discussion in Council, but has not been specially noticed in the Chief Conservator's review. The reports of circles, however, show that attention has continued to be given to this subject although in varying degree.

8. In the Second Circle, the efforts which are being made to reform the criminal tribe of Chenchus, are deserving of notice particularly in respect of the progress which these people appear to be making in the matter of education, both for boys and girls. There are now 14 schools: and 8 Chenchu boys are drawing scholarships at the Board Middle School, Markapur. It is noted with satisfaction that there has been a decided improvement in respect of Chenchu crime.

9. Notwithstanding much misrepresentation, and in the face, as has been observed, of much deliberately organized and lawless opposition, the department continued to render loyal and valuable service during the year under review. The Government have much pleasure in once more recording their appreciation of those services and their indebtedness to the Chief Conservator Mr. S. Cox, C.I.E., for the devotion and ability which he has displayed in the conduct of the affairs of his department.

(By order of the Governor in Council)

H. G. STOKES,
Acting Secretary to Government.

To the Chief Conservator of Forests.
" Accountant-General, Madras.
" Publicity Officer.
" Secretary to the Government of India, Department of Revenue and Agriculture (with C.L.).
" Inspector-General of Forests (with C.L.).
Editors' Table.

21 APR. 1924

ADMINISTRATION REPORT

OF THE

FOREST DEPARTMENT

OF THE

MADRAS PRESIDENCY

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

FOR THE

YEAR ENDING 31ST MARCH 1923

1922-1923

MADRAS
PRINTED BY THE SUPERINTENDENT, GOVERNMENT PRESS

1924

PRICE, 12 *annas.*]

BOMBAY BRANCH
OF THE
Royal Asiatic Society.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1923.

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY.

FIRST CIRCLE.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. ALTERATION IN AREA.

Reserved forests and reserved lands.—Two hundred and forty-five square miles of reserved lands were transferred to reserved forests and 2 square miles excluded during settlement. The area of reserved forests on 31st March 1923 was 2,501 square miles and that of reserved lands 15 square miles. *First Circle.*

2. FOREST SETTLEMENT.

2. 245·351 square miles were notified under section 16 of the Forest Act and 12·484 square miles remained under settlement.

3. DEMARCATION.

3. Twenty-eight miles were demarcated for the first time. Nineteen miles were specially repaired at a cost of Rs. 313, and 3,086 miles were repaired by subordinates free of cost. The total length of boundary demarcated at the close of the year was 4,195 miles.

4. FOREST SURVEYS.

4. The Survey of India Party was in Cherla range of the *Upper Godavari Division* during the year but did not stop long and surveyed only some Great Trigonometrical Stations. The Nugur and Bastar boundary between Cherla range and Bastar State remains unsettled. The line will probably be relaid by the Survey of India Party in 1924-25 or 1925-26.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. REGULATION OF MANAGEMENT.

5. *Preparation and control of working plans.*—No new working plans were sanctioned. *Ganjam*—The prescriptions of Mr. Minchin's working plan for the sal forests of Ghumsur were followed. Mr. Wimbush prepared a supplemental working scheme to Mr. Minchin's interim working plan for the Mohiri Hill forests of Berhampur range. The scheme was approved by the Chief Conservator and its prescriptions were carried out. *Vizagapatam*—The preparation of a revised working plan for the Palakonda range forests and of a bamboo working plan for the whole district on a four-year rotation was taken in hand by the District Forest Officer. *Godavari Lower*—The revised working scheme for the Coringa mangrove forests proposed during the previous year was prepared and it was approved by the Chief Conservator. A simple scheme for working the teak areas in Kopalli and Kovvada reserves of the Polavaram range was prepared and submitted to the Conservator for sanction.

The prescriptions of the sanctioned working plans were generally adhered to. For want of demand one fuel coupe in Sarvasidhi range of *Vizagapatam Division* and three fuel coupes and one bamboo coupe in each of the Peddapur and Gokavaram ranges in *Godavari Lower* remained unsold. In Devancheruvu reserve Block II fuel coupe No. XXV which is due for felling in 1943-44 was wrongly felled during the year under report, instead of coupe IV. The deviation was sanctioned by the Conservator and he ordered that coupe IV be felled in 1943-44.

First Circle.

(2) COMMUNICATIONS AND BUILDINGS.

6. *Roads and Bridges.*—Rupees 2,689 were spent on new works and Rs. 3,767 on repairs. Much progress was not made under new works owing to financial stringency. The existing roads were in most cases kept in repair.

7. *Buildings.*—Rupees 10,525 were spent on new works and Rs. 11,140 on repairs. The important works that were carried out were:—*Ganjam*—Rest-houses at Balinkia and Tarasingi, timber store shed at Behampur, barbed wire fencing round the Saw mill Superintendent's bungalow and clerk's quarters at Russellkonda; *Godavari Upper*—out-houses to the rest-house at Murmur and to the Ranger's quarters at Chintur, Range quarters at Cherla and foresters' quarters at Tunikicheruvu and Peddamidisileru; *Kistna*—Bezwada range office.

8. *Other works.*—Two wells one at Busilikota, *Vizagapatam*, and the other in in the compound of the range office in Cherla, *Upper Godavari.*

(3) PROTECTION OF FORESTS.

(*a*) *General protection.*

9. The following statement compares the number and classification of forest offences reported during the year with those of the preceding year and the average of the three preceding years :—

Cases.	Injury to forests by fire.		Unauthorized felling.		Unauthorized grazing.		Other offences.		Total.		Average for three years ending with 1921-22.
	1921-22.	1922-23.	1921-22.	1922-23	1921-22.	1922-23.	1921-22.	1922-23.	1921-22.	1922-23.	
Cases taken to court.	5	1	281	275	73	24	42	11	401	311	408
Cases compounded.	3	4	1,079	1,501	389	377	67	78	1,538	1,960	1,416
Cases undetected.	266	112	53	61	..	1	7	1	326	175	237
Total .	274	117	1,413	1,837	462	402	116	90	2,265	2,446	2,061

New cases of the year.—The figures show a decrease under all heads except under 'unauthorized felling'. The large increase under unauthorized felling was due to slackness of the range officer and his subordinates in Berhampur range of *Ganjam* district having been put a stop to and to a large number of cases of unauthorized clearing of land for cultivation in Bontha range of the same district having been brought to light. In *Lower Godavari* the cases of unauthorized felling rose from 242 to 501. The increase was due to the protective staff having been kept vigilant by the range officers. The decrease under 'injury by fire' was due to the exceptionally favourable fire season.

Cases—old and new—dealt with during the year.—The percentage of cases convicted was slightly less than in the previous year. This was due partly to several cases having been withdrawn after they were taken to court as the accused paid compounding fees in court. The punishments inflicted by the Magistrates are reported to be generally adequate. Beyond the usual notice of warning published in the District Gazettes to the villagers against setting fire to the reserved forest, no other special steps were undertaken such as suspension of privileges, closure of reserves to grazing, enhancement of grazing fees and so forth. The patrol party working in Bezwada Range referred to in last year's report was disbanded at the end of 1922 as the number of cases detected did not justify its retention.

10. Rupees 20 were granted to subordinates as rewards.

(*b*) *Protection from fire.*

11. Form 72 shows the area attempted to be protected and that actually protected. Of the total area of 2,501 square miles of reserved forest no fire protection was undertaken in 24 per cent of the area. Of the area subjected to fire protection 3·4 per cent was burnt. The fires were worst in *Lower Godavari* and in the majority of cases the cause ascribed is carelessness of passers-by. The number and origin of fires are compared in Appendix A.

The fire season was more favourable than in the previous year. Taking the *First Circle.* Circle as a whole, only 40,959 acres were burnt against 1,75,731 acres in the previous year. In *Upper Godavari* early burning was carried out in four of the six Ranges. The total area dealt with was 665 square miles and the area successfully protected 660 square miles. The cost of the operation was Rs. 8 per square mile on an average. In the remaining two Ranges 165 square miles were attempted to be protected by clearing and burning fire lines. The area actually protected was 160 square miles. The cost of the operation was Rs. 14 per square mile on an average. The results under both systems were excellent. A sum of Rs. 4,385 was disbursed to the Koyas and Reddis as rewards in addition to their wages for labour.

The average cost for the Circle of special and general protection was Rs. 12 per square mile attempted.

(*c*) *Protection from cattle.*

12. Two thousand two hundred and ninety-seven square miles of forest were open to grazing against 2,064 square miles in the previous year, i.e., 92 per cent of the total area of forests. Goats were excluded from all reserves. The number of cattle impounded was 8,836 against 7,394 in the previous year and 6,695 the average of the three years ending with 1921–22. A greater number of goats and sheep were impounded in *Vizagapatam* and *Kistna*. In *Ganjam* the grazing incidence rose from 7·44 acres in 1921–22 to 7·02 acres in 1922–23, in *Upper Godavari* from 1·23 to 1·17 acres and in *Lower Godavari* from 2·98 to 2·79 acres. The grazing incidence in *Vizagapatam* was 9·80 acres in 1922–23.

(*d*) *Protection against injuries from natural causes.*

13. Nothing of importance was done.

Lantana exists in the unreserves of Pondakhol and has undoubtedly spread in the past few years but has not yet found its way into the reserves. About 15 acres in the vicinity of Gazilabadi were freed from the pest at a cost of Rs. 50. The matter is engaging the attention of the Collector and District Forest Officer.

CHAPTER III.—SYLVICULTURE.

(*a*) *Natural reproduction.*

14. In *Ganjam* natural regeneration of sal was satisfactory as usual. In *Vizagapatam*, the regeneration of sal in Donabai, Samaralli and Barna reserves, and of *Bambusa arundinacea* in Narasapatam Range was good. In *Upper Godavari* the coppice growth in the two 20 acre clear-felled coupes in Tunikicheruvu and Ramachendram reserves worked during 1921–22 was satisfactory. The average height was seven feet. The growth of teak coppice was more vigorous than that of other species.

In Lakkavaram, Pulusumamidi and Marrigudem Ranges of *Upper Godavari*, *Dendrocalamus strictus* flowered and died but only sporadically. The flowering is reported to be more common on the hotter and drier slopes than on the moister and better soils. *Dendrocalamus* continued to seed and die in Peddapur and Gokavaram Ranges in *Lower Godavari*.

In *Lower Godavari* the natural seedlings of Casuarina in the Kandikuppa plantation grew well and fresh natural seedlings were noticed. In *Kistna* there have been accretions in Nachugunta and Yelichetladibba reserves and *Avicennia officinalis* (mangrove) is coming up nicely on them. The regeneration of this species in worked coupes is however unsatisfactory.

(*b*) *Artificial reproduction.*

15. *Regular plantation.*—In *Upper Godavari* no taungya operations were carried out as the results obtained from the previous year's operations were not encouraging. The long and severe hot weather together with an insufficient rainfall are not congenial factors for successful taungya operations. Attempts are being made to replace casualties in the areas already taken up.

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16. *Cultural operations.*—Sandal was as usual sown in different reserves in *Upper Godavari* and *Kistna* but with practically no success as in previous years. Further sowings have been stopped. In *Vizagapatam* 5 acres were sown with sandal, 1 acre with teak and 1 acre with *Pterocarpus marsupium*. The District Forest Officer reports that the first 2 were successful and the last not. He has however unfortunately not inspected the areas owing to the Fituri.

(c) *Operations for the improvement of growing stock.*

17. *Ganjam.*—In the Plains Sal Timber Working Circle cleanings were done in the clear-felled coupes of the previous year in both felling series. Subsidiary operations were carried out in Periodic Block II in both felling series and consisted of the removal of mature trees fit for the sawmill followed by improvement fellings to favour that portion of the crop which is to stand until its clear felling. The trees to be retained for final crop were marked departmentally and the remaining growth was sold standing to contractors. In felling series I the work is much in arrears owing to the quantity of inferior material to be cut being large and in excess of the demand. The policy has been to deal with only such area as can be sold standing. It is hoped to deal with a larger area in 1923–24 than in previous years and work up the arrears in two years' time, by making the improvement fellings lighter. In the Ravine Working Circle, coupe I of 1920–21 was cleaned once at a cost of Rs. 2–2–11 per acre, coupe II of 1921–22 was cleaned twice at a cost of Rs. 5–2–4 per acre and a third cleaning was also done over an area of 43 acres at a cost of Rs. 2–8–0 per acre. Improvement fellings were carried out in Gogodo reserve of Bontha range up to July 1922 when the felling had to be stopped owing to difficulty in carting the timber and to prevent overstocking the Exploitation Depot at Russellkonda. Climber cutting was done systematically in Pondakhol range and to a small extent in other ranges. Dead sal poles were extracted from the Kaliamba reserve of Russellkonda range and auctioned. A large quantity of dead sal timber for the sawmill was extracted from Chokkapad, Gullery, Rambha and Darpangia reserves of Mojjogoda range. In *Vizagapatam* creeper-cutting was done over 40 acres of young pole forest in Karaka reserve, and the overhead cover was opened in parts of Barna reserve to help the sal regrowth underneath. I consider the encouragement of the young sal growth at this stage unnecessary. The sal should be clear-felled when ripe, and regeneration will *then* come up without difficulty. In *Upper Godavari* improvement fellings were carried out over 50 acres in Seetharamapuram reserve and 47 acres in Tunikicheruvu reserve. The operation consisted of removing all the useless and crooked trees and those that were interfering with the growth of the more valuable species. Climbers and thorny undergrowth were also cut in these areas.

CHAPTER IV.—EXPLOITATION.

(a) *System of management.*

(i) Major Produce.

18. The different sylvicultural systems in force were—

Clear or regeneration fellings.—These were carried out in Ganjām in the two felling series of the Plains Sal Timber Working Circle as prescribed in the Working Plan. Forty-four thousand, four hundred and thirty-seven cubic feet were extracted at 6 pies per cubic foot, out of which 24,513 cubic feet were carted to the Exploitation depôt at Russellkonda. Thirty-eight acres of compartment XIII of the Kandikuppa casuarina plantation in *Lower Gōdāvari* and 160 acres in *Kistna* were clear-felled. *Upper Gōdāvari.*—Fifty acres in Tunikicheruvu reserve of Bhadrachalam range, 50 acres in Ramachandram reserve of Marrigudem range and 51 acres in Rekapalli hill reserve of Pulusumamidi range were clear-felled departmentally. The saleable timber was extracted, carted to the Gōdāvari river bank and sold and the refuse was collected in heaps and burnt. Teak-seeds were then broadcasted. The average cost of the operation was Rs. 36, Rs. 20, Rs. 30–11–6, and the gross revenue realized, Rs. 146–10–0, Rs. 68–6–9 and Rs. 287 per acre respectively. The financial results obtained from the working of the three coupes are encouraging and justify some

expenditure on tending the young crop and also on cultural operations towards increasing the proportion of teak in the felled areas. Stump planting in selected portions of the coupe will be tried. The felling and carting rates were low and have been raised so as to give the coolies and cartmen a decent living wage and ensure a better outturn. *First Circle.*

One thousand nine hundred and ninety-nine poles=5,007 cubic feet, extracted from the Tunikicheruvu coupe of 20 acres felled in 1921–22, were sold during the year and fetched a net price of Rs. 41–4–0 per acre.

Selection fellings—Ganjām.—These were carried out over 159 acres of Dhimirijoli reserve yielding 5,154 cubic feet of timber and over 1,500 acres of Rambha reserve yielding 29,281 cubic feet of timber. Five thousand sixty-two cubic feet were dragged down the timber slide constructed last year in the Dhimirijoli reserve. *Upper Gōdāvari.*—These fellings were confined to the unreserved lands under the control of the Forest Department and trees of 3 feet and above in girth were felled. The Yepi coupe in Bhadrachalam range was leased to a contractor for Rs. 3,000. Coupe III in Pulusumamidi range was not worked as there were no trees of exploitable girth in it. Seven thousand seven hundred and fifty-three cubic feet of timber were extracted in Cherla and Lakkavaram ranges, carted to the river bank and sold for Rs. 6,862. Ten thousand fifty-four cubic feet of timber were extracted in Nugur range but could not be carted to the river bank owing to the difficulty in procuring carts and hence remained unsold.

Improvement fellings.—In *Vizagapatam* improvement fellings were carried out in Donabai and Samaralli reserves by felling dead and top-broken sal trees. *Upper Gōdāvari.*—These felling were carried out on 50 acres in Seetharampuram reserve and 47 acres in Tunikicheruvu reserve. Two thousand, eight hundred and fifty cubic feet of timber were extracted and sold for Rs. 956. A second thinning was carried out in compartment XIV of Kandikuppa casuarina plantation in *Lower Gōdāvari* which yielded 5,400 cubic feet of fuel and this was sold for Rs. 521. In the teak lankas of Kovvada and Kopalli reserves, Rs. 100 was spent in creeper-cutting and girdling or felling inferior species which were interfering with the growth of teak.

Simple coppice and coppice with standards.—The fuel coupes in all divisions were worked under these systems.

Unregulated fellings.—These were as usual confined to unreserved lands and to the Rampa forests. In *Ganjām* permits for classified timber from unreserves continued to be issued on payment of seigniorage rates. The demand, however, was small.

(ii) Minor Produce.

19. *Bamboos and miscellaneous produce.*—Three methods of extraction were in vogue, viz., departmental collection, leasing the right of collection, and collection on permits. The first method was resorted to only to meet the petty requirements of the department for repairs to rest-houses, etc. Bamboos and other important produce, and tanning barks were leased to contractors. The right to collect seigniorage from purchasers at shandies for minor produce purchased from hill tribes was leased in *Vizagapatam*. Permits were issued for extraction of minor produce from the Agency tracts in *Lower Gōdāvari* and from some of the forests in the *Upper Gōdāvari* which were not leased out.

Strychnos nux-vomica.—This produce was sold separately in *Vizagapatam*, *Upper* and *Lower Gōdāvari* and *Kistna*.

Fodder grass and hay.—In *Gōdāvari Lower* the removal of fodder and thatch grass was allowed on permits as usual. The right to cut grass in the Cantonment ground at Samalkot was leased. In *Kistna* the collection of fodder grass from the closed areas was leased.

(*b*) *Agency of exploitation.*

(i) DEPARTMENTAL AGENCY.

First Circle. 20. The outturn of major produce by departmental agency is compared with that of last year in the following abstract:—

—	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos.	Minor produce.
			Rs.	Rs.
1921–22	240	182	620	972
1922–23	164	41	498	160

The quantity of major produce exploited was 5·75 per cent of the total outturn and chiefly consisted of timber felled in *Ganjām* for the sawmill and timber obtained from clear fellings carried out in *Upper Gōdāvari* on a larger scale than in the previous year. The decrease under 'timber' is due to the facts that fellings in the Ravine working circle in *Ganjām* were stopped from July 1922 to prevent overstocking in the Russellkonda depot and that a revised and more stringent specification for logs destined for the sawmill was adopted from September 1922 and to carting of the timber already felled for the sawmill not being complete.

The decrease under 'fuel' was in *Ganjām* and is due to the right of removing the inferior stuff in the improvement felling coupe being leased out to contractors and to the stoppage of fellings in the Ravine working circle.

(ii) BY PURCHASERS.

21. The following abstract compares the quantity of major produce and the value of minor produce removed by purchasers during the year with those of the preceding year:—

—	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos.	Grass and grazing.	Other minor produce.
			Rs.	Rs.	Rs.
1921–22	398	3,207	85,390	52,232	72,613
1922–23	450	2,909	1,40,295	47,048	69,762

The increase under 'timber' was due to leasing of two timber coupes in Vatangi and Bedadavole reserves in *Gōdāvari Lower* under newly-sanctioned working schemes, and that under 'bamboos' was due to leasing out whole reserves in Peddapur and Gokavaram ranges in *Gōdāvari Lower* as the bamboos were flowering and dying, and to keen competition amongst contractors in *Gōdāvari Upper*. The decrease under 'fuel' was due to non-leasing of Coringa mangrove coupes during the year. The decrease 'under grazing' was due to non-arrival of delta cattle in large numbers in *Lower Gōdāvari* forests owing to the failure of rains. The deficit under 'minor produce' was in *Vizagapatam* and due to the collection of 1922–23 revenue partly in 1921–22 and partly in 1923–24 and smaller prices realized for minor produce of 1922–23.

(III) *and* (IV) BY RIGHT-HOLDERS AND UNDER PRIVILEGES AND FREE GRANTEES.

22. The quantity and value of forest produce removed under this head were as follows:—

—	Timber in thousands of cubic feet.	Value.	Fuel in thousands of cubic feet.	Value.	Bamboos.	Grazing.	Other minor produce.	Total outturn.
		Rs.		Rs.	Rs.	Rs	Rs.	Rs.
Right-holders	..	..	..	..	..	403	500	903
Free grantees	65	9,137	24	1,038	604	11,975	269	23,023

Rights.—The Khonds in *Ganjam* were granted concessions in the way of building materials and free grazing for services rendered by them in fire-protection and general protection of forests. The estimated value of the produce enjoyed was Rs. 903 against Rs. 1,092 in the previous year. *First Circle.*

Free grantees —Such grants were made to the villagers chiefly for rebuilding their houses destroyed by fire or damaged by cyclone, and also to poor people for building houses in exceptional cases. The estimated value of all grants was Rs. 23,023 against Rs. 17,744 of the previous year.

(*c*) *Outturn and sources of forest produce.*

23. Total outturn from all classes of forests from all agencies is compared with similar details of last year in the following statement:—

—	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos.	Gross value of minor produce including grass and grazing.
			Rs.	Rs.
1921-22	725	3,470	85,361	1,38,754
1922-23	679	2,974	1,41,397	1,30,117

The total number of cattle for which grazing was provided was 200,834 against 269,400 in the previous year.

CHAPTER V.—FINANCIAL RESULTS.

24. The following abstract shows the financial position of the year compared with that of the previous year and the average of the preceding quinquennium:—

—	1922-23.	1921-22.	Average of the preceding quinquennium.
	Rs.	Rs.	Rs.
Revenue	5,40,426	4,15,052	4,51,589
Expenditure.			
B.—Conservancy and works	2,14,478	4,74,914	2,23,184
C.—Establishments	3,77,442	3,96,125	2,92,499
Total ..	5,91,920	871,039	5,15,683
Surplus ..	—51,494	—4,55,987	—64,094

The results are better than the previous year and the quinquennial average. Rupees 35,344, the value of timber supplied to the Russellkonda Sawmill from *Ganjam*, remained unadjusted in the accounts and Rs. 31,511 of outstanding revenue which fell due within the year remained uncollected. Lump sums of Rs. 40,000 under "investments on Government undertakings" and Rs. 6,504 under B-VI (*c*) have been debited against *Ganjam* in the March 1923. Final accounts by the Accountant-General. If these are taken into consideration the year's working shows a net profit of Rs. 15,361.

43·70 per cent of the revenue was derived from major produce, 39·26 per cent from minor produce, 8·60 per cent from grass and grazing, and 8·44 per cent from miscellaneous items. Of the expenditure 26·57 per cent was spent on the exploitation of forests, 20·60 per cent on their upkeep and improvement and 52·83 per cent on miscellaneous items. The revenue outstanding at the end of the year was Rs. 37,033, of which Rs. 31,511 fell due within the year. This is exclusive of Rs. 35,344, the value of timber supplied to the Russellkonda Sawmill.

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The estimated value of the produce at sale depots was nil. The important variations under 'Revenue' and 'Expenditure' are explained below :—

RECEIPTS.

(i) *By Departmental Agency.*

Timber + 31,888. The increase occurred in *Ganjām* and *Upper Gōdāvari* due in the former division to sale of logs rejected as unfit for the Sawmill at Russellkonda and in the latter division to the sale of timber from unreserves extracted in previous years in Bhadrachalam and Nugur ranges and the timber obtained from clear fellings in Bhadrachalam, Marrigudem and Pulusumamidi ranges.

(ii) *By purchasers.*

Timber + 16,894. Mainly in *Lower Gōdāvari* due to selling two pole timber coupes under a new working scheme.

Fuel + 19,777. The increase occurred in *Ganjām* and *Kistna* due to better prices realised for coupes.

Bamboos + 53,497. Due to selling whole reserves in Gokavaram and Peddapur ranges of *Lower Gōdāvari* as the bamboo is flowering and dying and to good prices realized for coupes in *Upper Gōdāvari.*

Grass and grazing—5,164. Due to non-arrival of Delta cattle in large numbers in *Lower Gōdāvari* as in the previous year.

(iii) *Miscellaneous* (*including confiscated drift and waif wood*).

No remarks.

EXPENDITURE.

B. Conservancy and works	— 260,436
C. Establishments	— 18,683

The decrease under B. Conservancy and works was mainly due to the debit of the cost of Russellkonda Sawmill machinery and Sawmill buildings in the previous year. The following also contributed to the decrease, viz., the Ravine and selection working circles were not worked and no road making was undertaken in *Ganjām* owing to financial stress. There was curtailment of temporary establishment under B-II all round. The decrease under C. Establishments was mainly under 'Travelling allowances' and 'Contract contingencies' due to enforcement of strict economy and to the revised rates of travelling allowance.

CHAPTER VI.—RESEARCH AND EXPERIMENTS.

25. *Research.*—In *Ganjām* specimens (cross sections of saplings) showing damage done by termites in young even-aged sal crops of Plains Sal Timber Working circle, were sent to the Research Institute, Dehra Dun. The Botanist reported discovery of fungal attack believed to be subsequent to and consequent on whiteant attack. Further attacks are being watched and the matter is engaging careful attention. regular thinning of these crops will go far to ensure a sound main crop.

26. *Experiments.*—*Ganjām.*—The report on timber seasoning by Mr. C. V. Sweet, the Seasoning Expert, Dehra Dun, referred to in last year's report was published during the year. Mr. Sweet did not touch Goomsur sal but only some of the timbers of little or no present importance. *Upper Gōdāvari.*—With a view to find out whether the satinwood pole forests are really young forests and are still producing satisfactory increment, two sample plots (1) a pure satinwood plot and (2) a mixed satinwood plot were opened in Bandirevu reserve of Marrigudem range and two similar plots in Tunikicheruvu reserve of Bhadrachalam range. In each plot 50 of the largest satinwood poles were selected and girth measured at 4′ 6″ height from the ground. They will be remeasured annually.

CHAPTER VII.—ADMINISTRATION.

27. *Tours.*—Mr. H. C. Bennett held charge of the circle from 1st to 15th April 1922 and was succeeded by Mr. D. T. Barry who remained in charge of the circle

till 19th March 1923. Mr. Barry had to proceed on leave to England as a result of malaria and dysentery. Mr. J. H. Longrigg relieved him and held charge for the remainder of the year. *First Circle.*

The prescribed minimum of touring was done by the District Forest Officer, *Kistna*. The short touring in *Ganjam* was due to changes of officers in charge, in *Vizagapatam* it was due to economy in travelling allowance, in *Upper Godavari* to the agency disturbances and in *Lower Godavari* partly to the agency disturbances and partly to changes of officers.

28. *Inspections.*—The Conservator inspected all District Forest offices and found them in good order. Some of the forests in *Vizagapatam*, *Upper Godavari* and *Kistna* were inspected and inspection notes written. At the instance of the Court of Wards the forests of the Madgole Estate were inspected by the Conservator and proposals for their better administration prepared. They were approved of by the Court of Wards and have since been sanctioned by Government. The Conservator also inspected the forests of *Parlakimidi Maliahs*.

His Excellency the Governor and the Chief Conservator inspected the working of the Sawmill at Russellkonda and the Suradevi sample plots.

29. *List of offices audited.*—The accounts of all District Forest offices were audited by the Local Fund staff of the Accountant-General's office and the results were satisfactory.

30. *Vernacular Training School.*—The school was held in *Ganjam* and started with 35 subordinates, of whom 5 were from Bihar and Orissa, 1 from *Upper Godavari* and 1 from *Lower Godavari* died of pneumonia following malaria. The school lasted from 6th January to 19th June 1923. Discipline and instruction were satisfactory.

31. *Health of the establishment including an account of measures of sanitation and casualties.*—*Upper Godavari* and the agency portions of *Ganjam* and *Lower Godavari* continued to be unhealthy. Thirty-seven subordinates went on sick leave and nine died of malaria or its results. Mr. Rigold, who was District Forest Officer, *Upper Godavari*, for three and a half years from 1913 and who on return from leave in December 1921 was reposted to that division, was obliged to go on leave on account of ill-health in February 1922. He died at the Tuberculosis Sanatorium at Madanapalli in November 1922. He had a better knowledge of the *Upper Godavari* forests than any Forest Officer in service and his death is a great loss to the Department.

CHAPTER VIII.—GENERAL.

32. *Formation and management of panchayats (to include Forest Village system).*—In *Kistna* the three reserves referred to in the last year's report continued to be under panchayat management. The District Forest Officer reports that he inspected Balusupadu and Gandrayi reserves and found signs of illicit removal of fuel and of goat browsing, that the boundary lines were overgrown and that he invited the attention of the Revenue Divisional Officer to these defects. No panchayats were in existence in the other divisions.

The Forest Village System is not in force in this circle.

33. *Measures for improving local supplies and facilities (includes water-supply, fuel, manure leaves, etc.)*—*Vizagapatam.*—A masonry well was constructed at Busilikota for the use of settlers, cattle and wayfarers. *Upper Godavari.*—A reservoir was constructed in a vagu in Pedamidisileru reserve of Cherla range to water cattle during the hot weather when the stream drys up. *Kistna.*—The spring near the Kondapalli Palace bungalow and the Pallibhavi in Kondapalli reserve were improved. Permission granted last year to private persons to dig tanks in Nachugunta Block II has not been availed of by them yet. The wants of the people in the matter of fuel were met in all divisions and there were no complaints. There is no demand for manure leaf from the forests of the circle.

34. *Timber Transit Rules.*—The rules worked satisfactorily in all divisions. *Vizagapatam*—Owing to frequent thefts from Palkonda range into *Ganjam*, the consent of the Collector of *Ganjam* was sought and granted to extend the scheduled

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area up to the Vamsadhara river and the Chief Conservator has been addressed to notify the revised boundary of the scheduled area. The proposals modifying the Rampa Transit rules referred to in last year's report have been accepted by Government and the necessary amendments published. The only two tana stations which remained in *Kistna* at the end of last year have been since found unnecessary and abolished.

35. *Jungle tribes.*—They exist in all divisions except *Kistna.* In *Ganjam* the department continued to be on very good terms with the Khonds owing to the generous policy pursued. In *Vizagapatam* the hill tribes availed themselves of the privileges conferred upon them without complaint and without abuse of rules. In the two *Godavaris* the Koyas and the Reddis continued to be serviceable to the department as usual. They were employed on the general fire-protection of forests as well as on the construction of roads and buildings and on demarcation works. They were also employed on dupati line-clearing, on the clear and improvement fellings in the reserves and on extraction of timber from unreserves in *Upper Godavari.* They were granted rewards in addition to the usual wages for the successful protection of forests from fire and were also allowed the concession of free grazing and free removal of forest produce for their domestic and agricultural requirements.

36. *Mining and quarrying.*—Rupees 1,413 were realized from quarrying rough stones, gravel, etc., in the reserves and unreserves of *Kistna.*

37. *Live-stock*—(*a*) *Elephants.*—The two baggage elephants 'Surat Pari' and 'Kapila' in *Upper Godavari* kept fit during the year.

(*b*) *Other animals.*—These exist only in *Ganjam.* There were 44 buffaloes at the beginning of the year, of which 16 were written off and 2 are reported lost. The loss of the two buffaloes is under investigation by the District Forest Officer. The actual balance at the end of the year was 26.

38. *Veterinary establishment.*—Nil.

39. *Tigers—Ganjam.*—A man-eating tiger has been roaming in Chandragiri reserve and has killed a few people of the neighbouring villages. The Collector has been requested to obtain sanction for granting a reward for its destruction. *Upper Godavari*—Two man-eating tigers, one at Murmur in the Marrigudem range and the other at Sukkumamidi in the Lakkavaram range were very troublesome. The Murmur man-eater was shot by the District Forest Officer, Mr. Mitchell, in February 1923. The other is still at large and a couple of Koya villages have been deserted on account of dread of this animal which has killed about thirty persons.

40. *Civil suits—Vizagapatam.*—The decree against the defaulting contractor referred to in the last year's report was pending execution. *Godavari Lower*—The two civil suits filed by the proprietor of the Gangole estate claiming certain portions of Kovvada and Kopalli reserves, which were pending in the Court of the Agency Commissioner, Waltair, were disposed of during the year by the Judicial Assistant to the Agency Commissioner. In one of the suits the plaintiff claimed 700 acres of land and Rs. 3,429 damages but the Court decreed in his favour only two small plots measuring 50 acres and dismissed the rest of the suit with proportionate costs. In the other, the claim was for 344 acres of forest land and refund of Rs. 282–12–0 being the penal assessment levied from the plaintiff. The Court dismissed the suit in respect of the forest land but allowed the claim for the refund and directed that the plaintiff should pay the defendant's costs. In both cases the plaintiff has filed an appeal in the Court of the Agency District Judge, Waltair. *Kistna*—The civil suit brought against the department last year and which was pending disposal was at the request of the plaintiff compromised.

41. *Control of the unreserved lands by the Forest department.*—In *Ganjam* the Revenue and Forest departments are jointly responsible for protection of the unreserves and the results on the whole are fair. In *Upper Godavari* the unreserves are under the control of the Forest department and local requirements were supplied from these lands.

H. C. BENNETT,
Acting Conservator of Forests, First Circle.

20th July 1923.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1923.

SECOND CIRCLE.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. ALTERATION IN AREA.

Second Circle.

One thousand eight hundred and seventy-one acres of reserved lands in Bellary and Guntur districts were constituted into reserved forest, and 217 acres—being the area of enclosures in two reserves in Bellary district which were added to the reserves in 1913 but omitted to be brought to account till now—were added to the area of reserved forests in the return. Thus the total addition to the area of reserved forest was 2,088 acres, or about 3·3 square miles.

Total area disforested in all the divisions amounted to 20,098 acres or 31·4 square miles. These changes brought a net reduction of 23 square miles in the area of reserved forests at the end of the year when the area stood at 4,659 square miles against 4,687 square miles at the beginning of the year.

2. *Reserved lands.*—No new areas were constituted into reserved land, but those that remained so at the end of the previous year were constituted into and added on to the area of reserved forests.

2. FOREST SETTLEMENT.

The settlement of 1,852 acres of Daroji foreshore reserve in Bellary district was completed during the year. No settlement is pending in any other district.

3. DEMARCATION.

There was very little work of new demarcation done. 0·45 miles, or about four furlongs, of reserve boundary was demarcated at a cost of Rs. 6 to differentiate a disforested area in Dornal Range of East Kurnool division. Rupees 8 was spent on construction of cairns in Eastern Nallamalai Block III in the same division.

Rupees 26 for the permanent demarcation work done in the previous year and brought to account in Bellary district was adjusted in accounts during the year. Thus the total amount spent on new work during the year was Rs. 40, while that spent on repairs was Rs. 921 against Rs. 3,230 and 1,118 respectively of the previous year.

The total length of demarcated boundaries of the reserved forests in the Circle at the close of the year stood at 6,743 miles against 6,888 miles at the beginning of the year, giving a reduction of 145 miles due to the exclusion of areas disforested during the year.

Nine hundred and forty-five miles of boundary lines in all the divisions were cleared and maintained by subordinates free of cost, and 115½ miles were recleared and cairns repaired at a total cost of Rs. 921 in all divisions.

In the Kurnool East division 15 miles of boundary was cleared by the panchayatdars.

4. Forest Surveys.

Second Circle. Thirty-nine square miles of reserves in the Anantapur district were surveyed by the Survey of India No. VII Party on the 1-inch scale.

Survey of coupes for sale and of roads repaired and preparation of maps were as usual done by Range officers and their subordinates.

The district reference and other maps referred to in section 80 of the Code were maintained in all districts.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. Regulation of Management.

Preparation and control of working-plans.

(1) Preparation.

Bellary.—The simple working plan for the Daroji tank bed reserve ordered to be done has not been done.

A revised scheme for the working of coupes in Harpanahalli Range is under preparation by the District Forest Officer.

Anantapur.—The revision of the working plan of Gooty Range is in progress.

Kurnool South.—A reconnaissance report for the working of reserves in Owk Range was submitted by the District Forest Officer to the Conservator which is under consideration.

Kurnool West.—To revise the working plan of Gundlabrahmeswaram Range experimental clear fellings, followed by concentrated regeneration operations, have been inaugurated A new working scheme for the lower and upper Terrai forest of Nandyal Range has been prepared. For the revision of Yerramalai working plan data is being collected.

Nothing worthy of note has been done in other districts.

(2) Control.

Bellary.—There is no regular working plan prepared and sanctioned for any range.

The temporary schemes and plans of Somalapuram reserve in Kudligi Range and those of Adoni and Harpanahalli Ranges have either lapsed or been cancelled. The provisions prescribed in them were, however, followed generally except fire tracing operations which were considered unnecessary and ordered to be given up by the Conservator.

Guntur.—The tentative working plan for Kondavid reserve of 13,650 acres was cancelled at the end of the year. This and the three other tentative plans existing in the district were in force.

Kurnool East.—In Cumbum Range an area of 28 acres was felled against 75 acres provided under a sanctioned preliminary working scheme.

The prescription of bamboo fellings in Gudem Range preliminary plan, which had lapsed, was observed. Coupes which did not find sales were felled departmentally by Chenchus.

Kurnool South.—An Extra Assistant Conservator has been specially posted for collecting statistics to arrange for supply of timber and fuel to villagers.

Three experimental regeneration coupes, aggregating to 61 acres, were clear felled, in Gundlakamma Range.

Kurnool West.—As in the previous year, work continued under the interim working scheme of Veldurti. Coupes III and IV were thinned and cultural operations were conducted in some of the blank areas. The latter failed owing to failure of the monsoon.

2. Communications and Buildings.

(a) *Roads and bridges.*

No new roads were opened in Bellary, Anantapur and Kurnool South divisions. *Second Circle.*
In Guntur, Kurnool East and Kurnool West divisions a total length of 35 miles of road was made at a cost of Rs. 3,588 against about 26 miles at a cost of Rs. 5,574 in the previous year. The average lesser rate this year was due to a greater length of alignment and earthwork.

The chief works done were—

Roads.	Distance.		Amount.		
	MILES.	FURLONGS.	RS.	A.	P.
In Guntur—					
Earthen road from Mogalitla to Venkatayapalem.	3	0	46	0	0
Kurnool East—					
(1) Eguvacherlapalli-Regatikunta road.	9	0	2,312	0	0
(2) Narthadikala-Guttalachenu road.	1	0	284	0	0
(3) Bridge on Eguvacherlapalli-Regatikunta road.	...	...	647	0	0

The other works were alignment of roads and construction of paths round coupes, 128 miles of the existing communications were repaired and maintained at a total cost of Rs. 16,169 against 164½ miles for Rs. 13,118 in the previous year. The higher rate in the year under report was due to metalling and repairing of pucca roads in the Nallamalais. The usual contribution to the Local Fund Department for the maintenance of Mantrallakanama ghat road passing through the reserves in East, South and West Kurnool divisions amounting to Rs. 3,900 was made.

(b) *Rivers*—Nil.

(c) *Buildings.*

The total amount spent on the construction of new buildings was Rs. 10,556 and that on maintenance and repairs was Rs. 11,332 as against Rs. 11,753 and Rs. 12,724 respectively in the previous year.

The chief buildings constructed were—

In Bellary—
Construction of Range office at Kudligi ... ... (In progress)
In Guntur—
Construction of subordinates' quarters at Remidicherla ... (Completed)
In Kurnool East—
(1) Construction of foresters' quarters and shop at Guttalachenu. (Do.)
(2) Construction of rest-house and out-houses at Erragondapalem. (In progress)
(3) Construction of out-houses to the rest-house at Eguvacherlapalli ... ... (Completed)
In Kurnool South—
(1) Construction of rest-house at Obulesanipenta ... ... (Completed)
(2) Construction of out-house to Obulesanipenta ... ... (Do.)
In Kurnool West—
Construction of kitchen and stall to the Sivapuram range quarters ... ... (Do.)

(d) *Miscellaneous.*

Rupees 1,058 and Rs. 247 were spent on new works and repairs as against Rs. 2,649 and Rs. 161 respectively in the previous year, on works of construction and clearing of wells and digging of trial pits for wells.

3. Protection of Forests.

(a) *General Protection.*

The total number of new cases reported during the year under all classes was 4,905 against 4,524 in the previous year, resulting in a slight increase of about 8 per cent during the year.

Second Circle.

Of the 4,905 cases of the year 335 cases were undetected. The balance of 4,570 new cases of the year together with those pending at close of the preceding year, amounted to 5,499 in all. Of these 4,612 were actually disposed of and 837 cases left pending at end of the year.

In Guntur the trouble resulting from the lawlessness of the villagers subsided during the earlier part of the year and the people when detected in the commission of forest offences were willing to compound rather than go to court.

The total number of cases taken to court for disposal was 1,479, of which 1,177 ended in conviction and 63 acquittals, leaving 239 cases pending with Magistrates.

The percentage of acquittals was 4·2 against 8·4 in the previous year. The number of cases actually compounded during the year in the several divisions of the circle and the amount of compensation fees realized are as shown below :—

District.	Number of cases componnded.	Compensation amount collected.
		Rs.
Bellary	537	7,747
Anantapur	652	12,707
Guntur	765	13,840
Kurnool East	359	5,462
Kurnool South	229	9,108
Kurnool West	516	4,356
Total ...	3,058	53,220

In Guntur rewards to the extent of Rs. 242 were sanctioned by the Chief Conservator for the two sensational forest cases of illicit grazing and forced rescue referred to in the previous report which ended in conviction.

In Kurnool East a rewad of Rs. 10 was awarded to a forester and a guard for the detection of a timber-smuggling case in Markapur range at night. The accused in the case who were habitual smugglers were awarded rigorous imprisonment by the Magistrate.

In Kurnool West a case of illicit removal of bamboos was detected in Ernipad reserve in which a Village Magistrate was one of the accused. He assisted in rescuing the bullocks from the carts loaded with bamboos. The case of rescue was separately tried by the Divisional Magistrate, Nandyal, and the village munsif was convicted and sentenced to pay a fine of Rs. 300.

Another important case tried by a Divisional Magistrate in this division was a case of receiving stolen forest produce (charcoal) by the servants of a wealthy resident of Paniem brought from Gani reserve forest.

This case, conducted by the Public Prosecutor, also ended in conviction and the accused were severely punished.

Punishments inflicted by Magistrates in forest cases were generally adequate and satisfactory in all the districts.

(*b*) *Protection from fire.*

The total area attempted to be protected from fire under the three systems of special protection, early burning and general protection was 4,182 square miles, of which 4,026 square miles were successfully protected. Figures in form 72 return of the year under report relate to the calendar year 1922 while those in the previous year cover a period of nine months April to December 1921. So no useful comparison can be made. The system of early burning was observed only in the three Kurnool divisions and the area treated under this system was 1,135 square miles of which 1,106 square miles were successfully treated.

The total area under special protection in all the divisions was 256 square miles of which 242 square miles were successfully protected. The total cost incurred for the area 1,135 square miles put under early burning was Rs. 3,821 or Rs. -6-0 per square mile against Rs. 6,358 or Rs. 24-13-0 per square mile for the area of 256 square miles under special protection.

The total cost of the fire protection operations of the year was Rs. 11,426.

(c) Protection from cattle.

Three thousand four hundred and twenty-one square miles of reserves were thrown open to grazing for all animals except goats for the whole year in all the divisions of the circle. Besides these, 290 square miles were open to grazing for all animals except sheep and goats in Guntur and 2 square miles in Kurnool West, though closed under the provisions of Yerramalai working plan, were thrown open for grazing for part of the year owing to scarcity of fodder on account of failure of monsoons. *Second Circle.*

In *Bellary* on account of the adverse seasonal conditions 45 square miles of closed reserves had to be thrown open to grazing.

In *Anantapur*, free grazing of all animals except goats was allowed for three months in the reserves of Gooty and Kalyandrug ranges owing to unfavourable seasonal conditions.

In *Guntur* grazing fees were reduced from 12 annas to 8 annas a cow unit.

In *East Kurnool*, the areas closed to grazing in Cumbum and Morricheruvu ranges were open to grazing on permits. In *Kurnool South*, an area of 6,000 acres was permanently thrown open to grazing in Sirvel reserves, and in *Kurnool West* free grazing was allowed in the Yerramalais for about two months.

The number of cattle impounded during the year was 65,059 against 54,243 in the previous year and against 52,703, the average for three years ending with 1921-22. The increase of 10,816 cattle in the year over the previous year's figure was contributed chiefly by *Guntur*, *Kurnool East* and *South* divisions and to some extent by *Bellary* and *Anantapur* districts. The increase in *Kurnool East* was mainly under goats in two ranges, and in *Kurnool South*, it was the result of efficient and close patrolling of the reserves by a special party of subordinates organized by the District Forest Officer.

No special reason worth mentioning is ascribed to the increase in other divisions.

(d) Protection against injuries from natural causes.

In *Kurnool East*, Chloroxylon swietenia trees over a large area in Morricheruvu range were defoliated by a caterpillar of a butterfly (unidentified).

CHAPTER III.—SYLVICULTURE.

(a) Natural reproduction.

Sandal is spreading in all the reserves of Madakasira range and in the Amagondapalyam reserve of Bukkapatnam range of *Anantapur* district; its regeneration in Sivapuram extension and Chilkanahatti sandal areas of *Bellary* district has not been good.

Hardwickia binata (Yepi) is said to have regenerated more freely around pentas *open to grazing* than in the closed areas of Morricheruvu range of *East Kurnool* but its regeneration was poor in *Guntur* and *Kurnool West* (Yerramalais) though there was profuse seeding in the latter district.

In *Guntur* the regeneration of mangrove was excellent in the coastal reserves, and coppice shoots in the felled coupes were fairly good.

In *Bellary* *Acacia eundra*, *Cassia fistula* and *Melia Indica*, and in the Nallamalais of *Kurnool*, Yegi (*Pterocarpus marsupium*) and Billudu (*Chloroxylon swietenia*) regeneration was fairly satisfactory. The natural regeneration of teak in *West Kurnool* was scanty; there was sporadic flowering of bamboos in the *Kurnool South* division. There was profuse seeding in most of the forest species during the year.

(b) Artificial reproduction.

Bellary.—The existing plantation at Moka is said to be thriving.

Guntur.—The raising of casuarina plantation in the Nizampatam reserve by private bodies to whom lands were leased being successful, they have applied for grant of further extension of lands.

Second Circle.

East Kurnool.—The teak plantings of 1921-22 in the emergency coupe at Chinnamantrala having failed, planting of teak stumps was tried on an area of five acres and 30 per cent of the plants have survived.

About an acre and a half of the emergency coupe at Telugurayanicheruvu was planted with Redsanders (*Pterocarpus santalins*) in baskets, from the nursery raised there but this failed.

West Kurnool.—A sum of Rs. 1,098 was spent on the upkeep of the existing plantations for weeding, cleaning and marking trees for thinnings.

(c) Cultural operations.

Bellary.—No cultural operations were carried out except the dibbling of sandal seeds in Jittinicutta reserve and the sowing of *Hardwickia binata* seeds in Somalapuram reserve both of which failed.

Anantapur.—Sandal seeds were dibbled in six reserves over plots aggregating 31 acres in extent and about 25 per cent of the seedlings which germinated survived the hot weather. The seedlings that had survived from previous sowings are said to be in good condition. The sandalwood area in the Amagondapalyam was inspected by Mr. Jackson in October 1922 and his report dated 14th November 1922 was submitted to the Chief Conservator.

The dibbling of Redsanders in the felled coupes of Mutchukota reserved forest, Tadpatri range undertaken over an area of ten acres and also in parts of *Kurnool South* division failed on account of the drought.

East Kurnool.—A sum of Rs. 442 was spent during the year for dibbling seeds of Teak, Inumaddi (*Terminalia tomentosa*)—Soapnuts, Billudu, Kanaga and Musti in various emergency coupes over an aggregate area of about 168 acres. The germination especially of Soapnuts, Billudu (*Chloroxylon swietenia*) and Musti was fairly satisfactory.

The experimental dibblings combined with mulching conducted by the District Forest Officer in five emergency coupes with a view to ascertain if mulching round seedlings would help them to survive the drought did not meet with more success than in previous years.

West Kurnool.—'Kummari cultivation' was undertaken during the year on a large scale at a cost of about Rs. 4,765 in ten emergency coupes over an aggregate area of about 250 acres. Some field crops such as korra, horsegram, etc., were sown with forest species chiefly of Nim, Yegi (*Pterocarpus marsupium*), Nallamaddi, Ippa, Teak and Chinduga. The preliminary ploughing in Bairluty, Rudracode and Nagaluty Eastern coupes resulted in a mass of natural regeneration of Yegi about 1,000 to 1,500 seedlings per acre. The Nim seedlings are said to be fairly healthy. The rest either germinated sparsely or did not survive the hot weather.

In the experimental plots A, B, C, D of Gundlabrahmeswaram the following seedlings of different species have survived :—

Teak	903
Yegi	114
Nallamaddi	348

(d) Operations for the improvement of the growing stock.

Bellary district.—Except in the Adoni range where simple coppice was adopted, all coupes were worked under coppice with standards.

Guntur.—All coupes felled during the year were fenced by contractors and the fencing of old coupes was maintained. The proposed walling in of the timber areas of Kondavidu and Bollapalli was not carried out for want of funds.

East Kurnool division.—Creeper cutting was done over 1,007 acres in Gudem range and prickly-pear was cut and burnt by the Chenchus in Gudem and Dornal ranges at a cost of Rs. 232.

West Kurnool.—Clearing in six teak plantations and thinning in portions of two plantations were undertaken. Trees were marked for thinnings in five plantations and big trees which were interfering with the growth of Teak and other valuable species were girdled and Atlas solution applied.

CHAPTER IV.—EXPLOITATION.

(*a*) *System of Management.*

(i) MAJOR FOREST PRODUCE.

The total area under working plan during the year was 624 square miles which is revised as per Chief Conservator's instructions conveyed in Proceedings Routine No. 1258, dated 25th September 1922. The various sylvicultural systems adopted in them are as given below :— *Second Circle.*

Method.	Area in square miles.	Percentage of total area under each method.
(*a*) Clear felling	8	1·28
(*b*) Coppice with standards	270	43 27
(*c*) Not subject to any definite system of work ...	346	55·45
Total ...	624	100

The prescriptions of several working plans and temporary working schemes which have lapsed or been cancelled and therefore deducted from the figures of the sanctioned working plans during the year are under revision.

Clear fellings were adopted in the working of fuel coupes of Adoni range, Bellary district, in Nandyal range, Kurnool West division, and in several ranges in the Kurnool East division and parts of Kurnool South division.

One coupe of 20 acres in Gundlakamma range and 2 coupes of 16 and 25 acres each in Sirvel range were clear felled.

Coppice with standards was largely adopted in Bellary and Kurnool West divisions.

Improvement fellings were carried out in East Kurnool in three ranges.

Selection fellings were carried out in a small area of Tekkalapad reserve of Guntur district.

(i) MINOR FOREST PRODUCE.

Except in East Kurnool and in the Nallamalais of West Kurnool, where bamboos and other minor forest produce were collected departmentally as usual through Chenchus, the produce in other districts was leased to contractors.

(*b*) *Agency of exploitation.*

(i) DEPARTMENTAL AGENCY.

Major produce.—In East and West Kurnool 70 and 61 per cent, respectively of the total yield of major produce was extracted departmentally through the agency of Chenchus in order to provide work for them.

In Guntur 147 cubic feet of timber was collected departmentally for repairs to the rest house at Remidicherla and boats in Bapatla range. In South Kurnool, the timber coupe of Gundlakamma range worked departmentally at a cost of Rs. 1,299 yielded an outturn of about 12,000 cubic feet of timber worth about Rs. 12,057. Some timber was also extracted in cutting railway guide lines in Chelama range ; the decrease in the collection of major produce by departmental agency when compared to the year 1921–22 is due to the fact that there were large balances of stock collected during the previous years, and left unsold for lack of demand and also to having been able to provide Chenchus with other works, *i.e.*, bamboo cutting and collection of minor forest produce.

Minor forest produce.—In the Nallamalais of East and West Kurnool divisions bamboos and other minor forest produce except tangedu bark was collected departmentally through the agency of Chenchus for reasons explained above. The increased outturn in bamboos when compared to the previous year is due to abandoning the monopoly system in Kurnool West division in favour of the supply on indents to all and that under minor forest produce is due to the good crop of tamarind during the year.

In other districts, there was no departmental intervention except the collection of sandal seeds and nux-vomica by subordinates free of cost in Anantapur district.

(ii) By purchasers.

Second Circle.

Major produce.—Except in cases referred to in the above paragraphs, timber and fuel, were as usual, extracted by contractors who purchased coupes standing.

In East and South Kurnool divisions soft species such as Buruga (Bombax malabaricum) Givotia-rottleri formis (Poliki) and Sterculia were much in demand for slate frames. The purchasers of these trees were required to extract trees over six feet girth at breast height which had been previously marked. The trees so marked were felled either by the contractors themselves or logged departmentally through Chenchu agency in Markapuram, Gudem and Cumbum ranges of Kurnool East division. This system was found to work satisfactorily in Kurnool East division with the result that about 12,817 cubic feet of soft wood species was removed against 3,420 cubic feet in the previous year. A coupe opened in Chelama range, Kurnool South division within easy reach of the railway station was not so successful. It yielded only 595 cubic feet against 2,995 cubic feet of the previous year, due, it is reported, to the restriction of felling placed upon the contractor under the system of work by coupes.

Minor Forest Produce.—The right to collect nux vomica seeds was again leased to different contractors in the several districts except in Bellary where there is little or no produce available.

The price fetched for the leases of tangedu bark (cassia auriculata) and rela bark during the year was Rs. 88,173 against Rs. 90,313 of the previous year.

The right to make hay from the four reserves of Bellary was leased to contractor Mr. Howes.

The military grass farms made hay in Bellary and Kurnool South divisions.

Ten stone quarries in Bellary district were leased. For grazing, stone, gravel earth and manure leaves, etc., permits were issued.

Three hundred square miles of closed area in Kurnool East division normally closed to grazing were open throughout the year under the orders of the Collector.

In Guntur, fodder grass in the babul area of Kolakalur reserve was leased out to a contractor for Rs. 1,200 against Rs. 1,652 in the previous year. The system of leasing out the right to remove grass in the closed areas of Vinukonda range did not succeed for want of bids.

(iii) By right and privilege holders.

As usual, the existing rights are those possessed by the Chenchus of Palnad range, Guntur district and Kurnool *districts* to the usufruct of tamarind trees and other minor produce, building materials for huts and to free grazing. The value of the latter comes to about Rs. 3,625.

The scheme sanctioned by the Chief Conservator in his proceedings No. 47, dated 20th May 1920, for extinguishing the existing rights possessed by the Chenchus of Guntur district and which was not enforced owing to the non-co-operation movement during the last year, is proposed to be taken up again as normal conditions are restored.

The value of timber and fuel utilised by the right and privilege holders in Kurnool South division is estimated at about Rs. 42.

(iv) By free grantees.

Free grants of timber in Bellary, Anantapur and Guntur and bamboos and palmyra leaves, etc., in the Kurnool divisions were made mostly for the rebuilding of houses destroyed by fire.

In Guntur, free grant of date leaves from Bapatla blocks for the Yerukulas of Stuartpuram criminal settlement was made to an estimated value of about Rs. 625 for making baskets and mats, which constitutes their chief means of livelihood.

One ghat talari in Guntur district was granted materials worth about Rs. 5 for the construction of a ghat shed.

Free removal of grass in head loads.—From all closed areas except those under cultural operations was allowed in Anantapur, Guntur and Kurnool districts.

Free removal of *Yepi leaves* in head loads was sanctioned in East Kurnool division for a part of the year. *Second Circle.*

Free grazing was allowed in Kalyandrug and part of Gooty Ranges of Anantapur district for a period of three months owing to failure of monsoons and scarcity of fodder.

The Yerukulas of Stuartpuram settlement were allowed free grazing of their cattle to the extent of Rs. 42.

The Chenchus of several Gudems in the Kurnool East division were allowed free grazing of 710 buffaloes and 776 cows under the orders of Government over and above the number allowed to them by right under settlement.

The quantity and estimated value of different kinds of produce removed by right and privilege holders and free grantees are as shown in the sub-joined statement.

—	Timber in thousands of cubic feet.	Value.	Bamboos in thousands.	Value.	Value of other minor forest produce including grass and grazing.	Total value.
		Rs.		Rs.	Rs.	Rs.
Right holders ..	1	42	..	..	3,625	3,667
Free grantees ..	78	8,229	7·3	470	1,201	9,900

(*c*) *Outturn and sources of forest produce.*

The total outturn from all classes of forests by all agencies is compared with similar details of last year in the following statements.

Year.	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos value.	Gross value of minor forest produce including grass and grazing.
			Rs.	Rs.
1921-22	580	2,926	47,006	4,23,072
1922-23	664	1,314	44,197	5,01,536

The increase under *timber* is due to the removal of timber from large areas disforested and handed over to the Revenue Department in Guntur district and also to the large area worked in Kurnool East division both by departmental agency as well as by contractors for soft wood species.

Fuel.—The fall is mostly in Kurnool West division, Bellary and Anantapur districts. The decrease in the two latter districts is attributed to the non-working of fuel coupes and also to the less amount realized by sale of fuel in unreserves. The fall in Kurnool West division is due to there having been large balance of stock of previous years and to engaging the Chenchus mostly on other works.

Bamboos.—The decrease in the year was due to the poor crop in the bamboo coupe sold in Bellary and also to fewer coupes sold in Kurnool East division, on account of the flowering and consequent death of the bamboos.

Minor Forest Produce, etc.—The increase was due to good grazing revenue realized in Anantapur, Guntur and Kurnool East and South divisions and also to better prices fetched for Tangedu bark and tamarind, etc., in Bellary and Kurnool West divisions.

The quantity of hay extracted by the Military Grass Farm is shown below :—

Bellary—119 tons.

Kurnool South—555 tons.

Application of co-operative methods to forest undertakings.—In Guntur, three fuel coupes were leased to the people of depressed classes at a nominal rate selecting five persons from the community as panchayatdars and taking agreement from them. The system was found to have worked well and will be further extended towards the formation of co-operative societies.

Second Circle.

In Kurnool West a co-operative society called Tekur co-operative credit society was formed and coupe XIII of Kurnool Working Circle was leased out to it. Though the society did not meet with much success owing to mismanagement, yet the members were convinced of the advantages of the system and have purchased the next coupe in the working circle at a little higher rate than that of the previous one.

Nothing has been done in this direction in other districts.

CHAPTER V.—FINANCIAL RESULTS.

The revenue and expenditure of the year under report is compared with those of the previous year and average of the preceding quinquennium in the following abstract:—

Particulars.	1922-23.	1921-22.	Average of the preceding five years.
	RS.	RS.	RS.
Revenue	7,52,310	6,31,601	9,81,206
Expenditure.			
B. Conservancy and Works	1,35,369	1,61,743	1,70,563
C. Establishment and Contingencies	5,18,002	4,86,479	2,83,331
Total B and C ...	6,53,371	6,48,222	4,53,894
Net results ...	+ 98,939	— 16,621	+ 5,27,312

The net results show a surplus of nearly one lakh of rupees against the deficit occurred in the previous year. As usual the three divisions of Bellary, Anantapur and Guntur alone contributed to the surplus while there were deficits in the three Kurnools as in the previous year.

The revenue of the year under report shows an increase of Rs. 1,20,709 over that of the previous year and a decrease of Rs. 2,28,896 compared with that of the average of the preceding five years. The increase is chiefly due to

(1) to the better prices realized in the Bellary division in the tangedu bark and minor forest produce sales,

(2) to the sale of rela bark which has not sold in the previous year,

(3) to the special steps taken for collecting grazing fees in Anantapur and Guntur divisions where the non-co-operation movement retarded their collection in the previous year,

(4) to the high prices obtained for spokes and felloes and sale of large quantities of *Bombax-Malabaricum* in Gudem and Markapur ranges of Kurnool East division for slate factories,

(5) to the high amount of over Rs. 12,000 fetched by the sale of timber felled in the regeneration coupe at Iskagundam, Gundlakamma Range, Kurnool South division, and.

(6) to the sale of large stock of timber and fuel collected during previous years in Kurnool West division.

The year closed with an outstanding revenue of Rs. 68,945-4-11 of which Rs. 3,714-8-10 fell due within the period under report and a sum of Rs. 3,075 being the irrecoverable amount of nux-vomica lease, has been recommended to be written off the accounts. The estimated value of the produce at sale depots was Rs. 293 against Rs. 1,058 at its commencement.

The total expenditure was practically the same during the two periods, the increase in the year being only Rs. 51,409 which calls for no remarks; but when compared with the quinquennium average there was an abnormal increase of Rs. 1,99,477, which is chiefly due to an all round increase in the pay of all ranks in the last two years.

	Per cent.
Out of the gross revenue of Rs. 7,52,310, the major produce contributed.	22
Bamboos	4
Grass and grazing	35
Minor forest produce	30
Miscellaneous	9
Total ...	100

Out of the expenditure of Rs. 1,35,369 under B Conservancy and Works, exploitation consumed 36 per cent, upkeep and improvements 63 per cent and miscellaneous item 1 per cent.

There was decrease in the expenditure under B Conservancy and Works like that of the previous year for the same reason of financial stringency which continued in the year under report; while under C establishment and contingencies there was a rise to the extent of Rs. 31,523 in the year under report. This is chiefly due (1) to the disbursement of pay and travelling allowances of the three Assistant Conservators during the whole period of the year under report against the short period of about 2½ months in the previous year, (2) to the arrears of pay drawn by some Extra Assistant Conservators according to the revised rates of pay sanctioned during the year, and (3) to the increase of Rs. 10,729 under C I (*a*) (Conservator) which is due to the permanent Conservator being away on leave for five months in the previous year. *Second Circle.*

CHAPTER VI.—RESEARCH AND EXPERIMENTS.

(*a*) *Research.*

No research was carried out during the year in this circle.

(*b*) *Experiments.*

Bellary.—An experiment on a small scale to stimulate the production of root suckers by exposing and wounding the roots of Dalbergia Sissoo was carried out at a cost of Rs. 30. The experiment is so far successful and it will be watched and further extended during the current year.

Anantapur.—Tangedu (Cassia Ariculata) sowings in Golla reserve.

There were no fresh sowings undertaken in the year, but the operations were confined to counting of seedlings in sample plots treated under methods II to V described in the report of the year 1919–20 relating to the old central circle. The results of the countings in the 1/8 acre plots of 1919–20 of the four methods are as given below :—

Method.	Number of seedlings in March 1922.	Number of seedlings in March 1923.
II	462–8′ high.	376
III	3,568-2′ „	3,248
IV	2,793–3′ 6″ „	2,579
V	8,104–2′ 9″ „	7,384

The average height of the seedlings is about the same as that of the previous year.

The difference in the number of seedlings existing is due to casualties owing to drought and late rains.

The results of the countings on the 1/10 acre sample plots of 1920–21 are noted below :—

Plot number.	Seedlings in March 1922.	Seedlings in March 1923.	Average height.
I	632	570	5 inches.
II	173	151	6 „
III	1,825	1,751	9 „
IV	1,056	983	6 „
V	1,324	1,251	6 „
VI	56	33	4 „
VII	78	55	3 „
VIII	296	267	6 „
IX	88	57	3 „

As reported in the previous years' report, the seedlings were found to shed their leaves and the leading shoots were found to wither during the dry weather and to put forth new shoots as soon as there was rain. The District Forest Officer inspected the areas in February 1923 and recorded the following results :—

Plots 1 *and* 2.—Fairly successful.

Plots 3, 4, 5 *and* 8.—Very successful.

Plots 6, 7 and 9.—Poor.

Plot 10.—Thorough failure.

As the seedlings were too small to cut back, in order to ascertain the age at which they can be cut for bark, this was not done.

Kurnool, East.—(1) Mulching of seedlings was tried in plots of one square chain in five emergency coupes. No benefit is said to have been derived from this.

(2) A thousand teak stumps from plants, a year and a half old, were put out over an area of five acres in the emergency coupe at Chinnamantrala.

Second Circle.

Though all of them put forth leaves, only a third survived at the end of the year.

Kurnool, South.—The Boswellia Serretagum sent to the Forest Economist, Dehra Dun, last year is reported to have yielded about 5·7 per cent of oil.

Kurnool, West.—The sample plots in the Nagaluty teak plantations were maintained. The results recorded in July 1922 are noted below.

Plot number.	Existing trees.	Annual increment girth in inches.
I	12	0·96 each.
II	12	0·68 ,,
III	12	0·59 ,,
IV	12	0·50 ,,

At Gundlabrahmeswaram an area of 12 acres was divided into 4 plots, A, B, C, D of 3 acres each and treated to ascertain the best method of inducing regeneration.

Each of the four plots was divided it its turn into three sub-plots of one acre each and was sown with seeds of several timber species, such as teak, yegi (Pterocarpus Marsupium) and Nallamaddi (Terminalia tomentosa-varcrenulata.)

Plot A, the central one, was merely kept clear of weeds and grass.

Plot B was sown with untreated seeds. A large number of seedlings germinated, but many died.

Plot C was sown with germinating seeds. Very few plants existed in March.

Plot D was sown with seed and kumaried.

This block produced the best results, a large number of seedlings germinated, and these are growing vigorously.

In all the plots B, C and D, natural regeneration of Ougeinia dalbergioides was observed. These seedlings are healthy.

CHAPTER VII.—ADMINISTRATION.

The district charges were the same as last year. The officers who held the circle and the district charges during the year are as shown below:—

Circle Charge.

Name of Officer.	Period. *From*	*To*
A. B. Jackson	1-4-22 ...	31-3-23

District Charge.

District.	Name of Officer.	Period. *From*	*To*
Bellary ...	L. S. Janes, Esq., Extra Assistant Conservator.	1-4-22 ...	21-6-22.
Do. ...	H. R. M. K. Law, Esq., Assistant Conservator.	22-6-22 ...	7-7-22.
		10-10-22 ...	1-11-22.
Do. ...	M.R.Ry. K. Gazaraja Mudaliyar, Extra Assistant Conservator.	8-7-22 ...	9-10-22.
Do. ...	D. A. Stracey, Esq., Extra Assistant Conservator.	2-11-22 ...	31-3-23
Anantapur.	A. B. Myers, Esq., Deputy Conservator...	1-4-22 ...	21-6-22
Do.	L. S. Janes, Esq., Extra Assistant Conservator.	22-6-22 ...	31-3-23
Guntūr ...	T. Clear, Esq., Deputy Conservator ...	1-4-22 ...	31-1-23
Do. ...	J. D. Connolly, Esq., Assistant Conservator.	1-2-23 ...	14-2-23
Do. ...	A. M. C. Littlewood, Esq., Deputy Conservator.	15-2-23 ...	31-3-23
Kurnool, East.	D. A. Stracey, Esq., Extra Assistant Conservator.	1-4-22 ...	30-4-22
Do.	M.R.Ry. T. V. Venkateswara Ayyar, Extra Assistant Conservator.	1-5-22 ...	31-3-23
Kurnool, South	H. W. A. Guodoin, Esq., Deputy Conservator.	1-4-22 ...	...
Do.	E. M. Crothers, Esq., Deputy Conservator.	2-4-22 ...	9-5-22
Do.	M.R.Ry. E. V. Padmanabha Pillai, Extra Assistant Conservator.	10-5-22 ...	31-3-23
Kurnool, West	E. M. Crothers, Esq., Deputy Conservator.	1-4-22 ...	22-12-22
		13-2-23 ...	31-3-23
Do.	M.R.Ry. S. Ramaswamy Ayyar, Extra Assistant Conservator.	23-12-22 ...	12-2-23

Second Circle.

The range charges were the same as in the previous year but the proposal to abolish the Adoni range referred to in the last year's report matured and orders of the Chief Conservator approving it after effecting the disreservation of certain reserved areas and the formation of panchayats for others were issued towards the close of the year. The orders are being carried out. The special panchayat officer is working in the range. Transfer with effect from 1st March 1923 of a portion of Nandyal Reserved Forest consisting of a portion of Nandyal block II, Ernipad and whole of Terrai block I (Gazulapalli) and alteration of Eastern and Southern boundaries of West Kurnool division were sanctioned during the year but effect was given to it actually from 1st April 1923.

Tours.—There was no occasion for Chief Conservator to visit any of the divisions in the circle during the year.

CONSERVATOR'S TOUR.—Mr. A. B. Jackson visited all the districts in the year and inspected reserves in all except Guntur and East Kurnool divisions.

In Bellary he inspected Bellary, Harpanahalli and Kudligi ranges and submitted his inspection notes. He submitted also a detailed note of his inspection of the Nallamalais in Giddalore range of Kurnool South Division wherein extensive illicit fellings were going on, with remedial measures proposed, which were published in Chief Conservator's Proceedings No. 44, dated 29th January 1923.

As a measure to prevent illicit fellings in the future it was resolved to work the reserve for timber departmentally in order to meet the local demand. An Extra Assistant Conservator was placed on special duty towards the close of the year to study the question and collect necessary statistics. In Anantapur district the Conservator investigated the grazing question and the general demand for disforestation. He inspected some of the reserves to ascertain the result of protection in them and submitted his inspection note to the Chief Conservator of Forests in C. No. 1906/22, dated 14th November 1922.

District Forest Officer's tour.—All officers except District Forest Officer, Bellary, did the requisite amount of touring. The touring of District Forest Officer, Bellary, was short by 45 days due to transfers.

Inspection.

All the District Forest Offices in the Circle were inspected by Conservator. The result was generally satisfactory in all of them.

All the Range offices were inspected by the respective District Forest Officers during the year.

In one range in Guntur district, the permits issued to permit issuing gumastas were found to have not been properly accounted for though their deposits were released. The matter is reported to be under investigation.

Except this, no serious irregularities in the inspection of the other ranges were brought to notice.

Audit of the District Forest Offices.—The accounts for 1921–22 of all the offices were audited by the Auditing staff of the Accountant-General and the general result was found to be fairly satisfactory.

Recruitment and training.—The three Assistant Conservators Messrs. J. D. Connolly, H.R.M.K. Law and J. C. Wrench who were posted to the Circle in the previous year, continued their training.

Recruitment to the Madras Forest College.—Nil.

Recruitment to the Vernacular Training School.—No school was sanctioned and opened in the Circle, but eight forest guards and one forester from the districts of Bellary, Anantapur and Kurnool South were deputed for training in the school held at Cuddapah in the III Circle and six guards and four foresters deputed from Kurnool East, Kurnool West and Guntur districts to the school at Russellkonda in the I Circle.

Health of Establishment, including an account of measures of Sanitation and Casualties.—The health of establishment was satisfactory in Bellary and Anantapur, fair in Guntur and Kurnool East divisions and not good in South and West Kurnool divisions owing to prevalence of Malaria.

Second Circle.

In Anantapur, one forester and one guard died and another guard was murdered. In South Kurnool three guards died of Malaria and in West Kurnool, one ranger, one forester and one range peon died and many subordinates had to be granted leave on medical certificate. One forest guard in East Kurnool division mysteriously disappeared and it was presumed and concluded that he was carried away by a man-eater.

Many guards and foresters suffered from guinea-worm in East Kurnool.

No measures of sanitation were undertaken anywhere in the Circle.

Work and Conduct of Establishment.

That of the Executive staff, rangers was generally good except a few stray cases here and there.

One ranger, I. John, VII grade, was dismissed from service for preparation of false pay bills and misappropriating Government money.

That of the protective staff, foresters and guards, was generally not good.

CHAPTER VIII.—GENERAL.

(i) Formation and Management of Panchayats.

There were no new panchayats formed, but on the other hand two reserves in *Bellary* were resumed as the panchayatdars were unwilling to renew the leases, and three reserves under panchayat were disforested. In *Anantapur* district one reserve was resumed by the department owing to mismanagement by the panchayat, and in *West Kurnool* division one panchayat was dissolved owing to mismanagement, one panchayat in *Guntūr* and one in *East Kurnool* were dissolved and reconstituted during the year. The management of the only panchayat in *South Kurnool* was commended by the Revenue Divisional Officer.

In all other divisions the management on the whole ranged from bad to fair.

(ii) Measures for Improving Local Supplies and Facilities.

In *Bellary*, fuel coupes were as usual opened and sold at fair prices and considerable quantities of fuel were brought into Bellary town by the contractors and made available for the public.

In *Anantapur*, with a view to supply fuel and small timber to the adjacent villagers coupes were opened in nine reserves and put up for sale but only three of them were sold.

Concessions were granted to ryots to water their cattle in the adjoining reserves where water was available, and to sink wells and repair ponds in certain reserves. Removal of manure leaves was allowed on permits.

In *Guntūr*, so many as 41 fuel coupes were opened and advertised for sale, but only 16 were sold owing to the existence of large disforested lands still not brought under cultivation.

For the improvement of water-supply one well was sunk by the department in Mutukur Extension Reserve, primarily for the Chenchu settlers. Permission to private individuals was freely granted for constructing and repairing tanks, and spring channels. There was very little demand for manure leaves and the little was met from other sources.

Cattle were as usual fed on fodder leaves lopped from trees and no control could be exercised over it as the restriction of closing to grazing during the hot weather was removed and the establishment was powerless to prevent such lopping of trees.

In *Kurnool East*, owing to the existence of extensive unreserved lands and shrotriyams there was very little demand for fuel and fuel felled from the emergency coupes was not sold. An area of 28 acres in the working scheme of Cumbum Range for supplying agricultural implements to the local ryots, which was sanctioned in the previous year, was worked and a considerable quantity of produce derived remained unsold at the close of the year.

In *Kurnool South*, Timber, Fuel and Bamboo coupes were worked as usual to meet local demand but the output was insufficient to coupe with the demand and therefore steps were taken to study the situation and take measures to deal with it.

In *Kurnool West*, Timber derived from emergency coupes was sold to ryots at concession rates for bonafide domestic purposes on production of certificates from Tahsildar and Deputy Tahsildar on the bonafideness of the demand. *Second Circle.*

A fuel coupe in the Yerramalais was sold to a co-operative society and another to a contractor. Manure leaf was supplied on permits.

(iii) TIMBER TRANSIT RULES.

As in the previous year, there were no rules in force in *Bellary* and *Anantapur* districts. In *Guntūr*, the rules were enforced satisfactorily. In *Kurnool East*, there were no complaints and four tanadars were removed as the checking could be done efficiently by the regular protective staff.

(iv) JUNGLE TRIBES.

In *South Kurnool* division, there are only a few Chenchus in two ranges, Sirvel and Chelama. The Chenchus in the latter serve the department as watchers and guards and as coolies under contractors and those in the former live on temple charities and the presents from pilgrims and are also employed under ryots to guard their farms.

In the *Kurnool East* and *West* divisions the Chenchus were employed on road works, felling of timber, fuel and bamboos, collection of minor produce and on sowing and planting operations.

An amount of Rs. 1,459-10-0 was sanctioned by the Special Chenchu Officer for cultivation work so that the Chenchus may be trained in and habituated to agriculture and 180½ acres in seventeen gudems were operated resulting in success obtained in thirteen gudems and failure in four, the crop harvested being cholam, horse and bengal-grams.

In order to make the Chenchus fit for other walks of life, carpentry and basket-making classes were opened under competent instructors to teach the trade to the children of selected gudems of *Kurnool East* and *West* divisions and an amount of Rs. 285-7-1 was spent towards fees to the instructors and purchase of materials. The carpentry class is to teach Chenchus to build ordinary country carts. The results obtained in the *West* division are reported to be encouraging but in the *East* division no carpenter to serve as teacher was secured as the gudems in the division are more in the interior of forests than in the other divisions. Baskets made by Chenchus children were sold at the festival at Srisailam and Rs. 15 realised therefrom.

The Chenchus in Indreswaram gudem were given Rs. 375 for stone lining the well sunk by them in the previous year and constructing a parapet wall round it and providing the well with pullies. As a result of this well, the Chenchus in this gudem no longer suffer from guinea-worm.

There were no new schools opened nor any closed during the year. The total average strength of all the twelve schools existing is 211 boys and 170 girls and the total average attendance was 194 boys and 137 girls. Eight Chenchu boys are studying in various forms in the Board Middle School at Markapur drawing each a scholarship of Rs. 100 per annum.

Four hundred articles of clothing valued at Rs. 563 were distributed to the Chenchu school children.

Loans in the shape of plough bulls for agriculture were granted to Chenchus.

Thirty-four pairs of bulls at a total cost of Rs. 3,910 were obtained during the year both in the *East* and *West* divisions against 38 pairs at a cost of Rs. 4,560 sanctioned by the Collector. The loans are recoverable in five years.

The number of crimes reported against the Chenchus were 14 involving 31 persons of which 10 cases covering 23 persons were disposed of during the year; 16 of these were convicted and sentenced some to undergo imprisonment and some awarded stripes.

Two Chenchu warrantees and one Sugali who were committing dacoities on the Atmakur-Nandyal road were arrested during the year by the Assistant Chenchu Officer Mr. V. T. Staggs who successfully raided their rendezvous and captured them with the aid of Police. One of them was sentenced to 4½ years' rigorous imprisonment by the Divisional Magistrate, Nandyal, and the others were committed to Sessions.

The Assistant Chenchu officer, Mr. Staggs, deserves credit for hiswork and conduct.

Second Circle.

There are no jungle tribes in *Bellary* and *Anantapur* districts. In *Guntūr*, the Chenchu settlers of Palnad range as in the previous year continued to enjoy all the rights and privileges possessed by them in the reserves. The scheme sanctioned by Chief Conservator in his Proceedings No. 47, dated 20th May 1920, for extinguishing the rights was not given effect to during the year pending restoration of law in the district which has since been secured.

(v) MINING AND QUARRYING.

In *Bellary*, two licences granted for prospecting minerals to two persons in two blocks were renewed for another year.

In *Anantapur*, licence for prospecting gold in Bhadrampalli reserved forest was granted to a gold mines company.

A lease for 30 years for mining barytes was granted in another reserve.

In *Guntūr*, the diamond prospecting licence granted in 1920–21 for Venkatapalem reserve was renewed. The undertaking failed and the company went into liquidation.

In *Kurnool West* division, four fresh licences were granted in the year to prospect barytes and 953 tons from these prospecting blocks and 789 tons of barytes from the blocks leased in previous years were removed. A company known as Bezwada Portland Cement Manufacturing Company, Limited, is being floated for collection of material for cement on a royalty basis from the tract of 390 square miles in the Yerramalais referred to in the previous year's report. The right to quarry and remove slabs and building materials granted in the two ranges, Dhone and Kurnool, continued during the year.

(vi) LIVE-STOCK.

(*a*) *Elephants.*

Two baggage elephants are maintained in *West Kurnool* division and they are reported to be in good condition.

(*b*) *Other animals.*

In *South Kurnool* two bullocks confiscated in a forest case were maintained and made use of in departmental operations, such as construction of rest-house.

Of the 10 bullocks that existed at the beginning of the year five were condemned and written off, and of the remaining five, two are unfit and the rest are in good condition.

(vii) VETERINARY ESTABLISHMENT—*Nil.*

(viii) SUITS.

There were no suits in the period.

(ix) CONTROL OF UNRESERVED LANDS BY THE FOREST DEPARTMENT.

In *Kurnool East* division the control of Tangedu bark and nux-vomica in all the unreserves and the general control of unreserves in certain villages, to prevent smuggling of minor forest produce remained with the department.

There are no unreserved lands in charge of the department in other divisions of the circle.

(x) GENERAL.

(*a*) In *Guntūr*, the problem of combating the non-co-operation movement was engaging the attention of all the officers during the first half of the year which movement has since been completely suppressed. The grievances of the ryots were redressed wherever possible.

Reserves were opened to grazing throughout the year and rate of grazing fees was reduced.

Mr. Connolly, Assistant Conservator of Forests, was deputed to investigate the question of meeting the demand of the people of upland taluks and he submitted a special report in the matter which is pending orders of Government.

(*b*) In *East Kurnool*, a man-eating tiger has been roaming about in Dornal and Morricheruvu ranges. A reward of Rs. 250 has been offered by the Collector for its destruction. About a dozen villagers are reported to have fallen victims to it.

BELLARY,
28th July 1923.

T. A. WHITEHEAD,
Acting Conservator of Forests, Second Circle.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1923.

THIRD CIRCLE.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. ALTERATION IN AREA.

Third Circle.

1. *Reserved forests.*—There is a net decrease of eight square miles, which is almost entirely due to disreservation in the *West Cuddapah* (nearly six) and *Chingleput* (a little over two) divisions. Elsewhere the areas disreserved were insignificant. The disreservation was mainly to satisfy the wants of adjoining villagers for cultivation and other purpose and to a lesser degree to improve boundaries. Further areas are under consideration for disreservation. An aggregate of about a quarter of a square mile was added in three divisions.

2. *Reserved lands.*—There is a net increase of 730 acres. Eight hundred and ninety-nine acres were added, of which 384 were due to rectification and the balance to small additions in three divisions. One hundred and sixty-nine acres correspond to the aggregate of areas finally reserved during the year.

2. FOREST SETTLEMENT.

3. The final settlement of the Rapur Velligonda reserves is not yet quite complete as the final notification submitted by the Forest Settlement Officer had to be returned for amendment just before the close of the year.

The proposal to reserve five square miles in the Chitvel Range in the *South Cuddapah* division referred to in last year's report was not approved by Government.

3. DEMARCATION.

4. One mile of new demarcation was done in the *West Cuddapah* division owing to the disreservation of part of a reserve and 24 miles of final demarcation in the *Chingleput* division. Five thousand four hundred and eighty-seven miles of boundary are stated to have been recleared, mostly by Forest subordinates without extra cost.

4. FOREST SURVEYS.

5. A Survey of India party was at work in the *West Cuddapah* and *Chittoor* divisions and is reported to have surveyed 39 whole reserves and parts of five others on the 1″=1 mile scale. The aggregate area covered was 288·96 square miles.

It was decided that no survey in these areas on other than the above-mentioned scale was necessary.

6. Sundry coupes were surveyed and roads aligned, etc., by the local staff. The prescribed reference maps were posted up to date.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. REGULATION OF MANAGEMENT.

(*a*) *Preparation and control of regular working plans.*

7. The preparation of the working plan for the *North Cuddapah* division referred to in the last report has had to be recasted, but its submission is still delayed by the District Forest Officer (Mr. Narayana Ayyar).

Third Circle.

A Working Plan for part of the Palkonda Hills (17 square miles) in the *West Cuddapah* division was sanctioned and was brought into operation from 1st April 1923.

The District Forest Officer *West Cuddapah* (Mr. C. Mahony) prepared a tentative scheme for other parts of the division and reported its submission after the close of the year through the Collector, but it has not been received by the Conservator up to the date of this report.

Only one of the three working plans reported last year as under preparation in the *Chittoor* division was completed. This, however, had to be returned for revision and after a change of District Forest Officers, was considerably modified. It was received back after the close of the year and is under consideration by the Conservator.

The revision of the working plans in the *North Vellore* division was not completed during the year. It is proposed to have a single working plan for the whole division and this is promised before long by the District Forest Officer.

Many of the existing working plans cannot be worked strictly in accordance with the prescriptions owing to lack of demand and in consequence coupes are often in arrears. In some the prescribed coupes are too large and in several cases revisions and deviations have been sanctioned.

In two or three instances the system of working has been changed from coppice with standards to pure coppice.

2. Communications and Buildings.

(*a*) *Roads and bridges.*

8. The expenditure during the year was Rs. 14,092 as against Rs. 21,630 in the previous year. The reduction was due to the financial stringency, new work being cut down to the minimum. The new work comprised 16 miles of roads and bridle tracks costing Rs. 6,445 and was confined mainly to the Seshachalam Hills in the *South Cuddapah* division, where the scheme of a net work of communications is approaching completion.

9. Rupees 2,110-8-0 was spent on renewals of material for use on the tram lines in the *Nellore* division.

(*b*) *Rivers.*

10. No rivers were tampered with in the Circle by the Forest department.

(*c*) *Buildings.*

11. The expenditure was restricted owing to shortage of funds and but Rs. 31,481 were spent against Rs. 47,536 in the previous year.

Of this sum, Rs. 15,608 was for new work and Rs. 9,621 on repairs and maintenance, which latter figure closely approximates that of the year before. The establishment charged under this head fell from Rs. 7,517 in the previous year to Rs. 6,252 due to dispensing with bungalow watchers wherever possible.

12. The important items of new work were—

North Cuddapah.—Completion of range quarters at Badvel.

Completion of permanent camps for the Vernacular Training School.

South Cuddapah.—Construction of subordinates' quarters at Balapalli.

Construction of subordinates' quarters at Kangamadugu.

Nellore.—Construction of subordinates' quarters at Gudur.

Construction of subordinates' quarters at Gonupalli.

Construction of Range office at Kavali.

Chittoor.—Completion of Range office at Mamandur.

Completion of Range office at Bhakarapet.

North Vellore.—Improvement of the Range quarters at Odaguthur.

Three rest houses in the *Chingleput* division were transferred to other departments.

Third Circle.

(d) Miscellaneous.

13. Expenditure under this head was Rs. 2,302 against 2,363 in the previous year.

Rupees 1,637 were devoted to new works, of which the chief item was the eradication of vegetation round the Mamandur village and subordinates' quarters with a view to improving the sanitation of the locality.

Other expenditure was on water-supply.

3. Protection of Forests.

(a) General protection.

14. The total number of cases reported during the year is 8,362 against 7,286 in the previous twelve months, involving an increase of roughly 12 per cent.

The biggest increase—25 per cent—occurred in the *Nellore* district, which the District Forest Officer (M.R.Ry. V. N. Seshagiri Rao Avargal) has not attempted to explain in his report. It is alleged, however, that the increase in illicit fellings is due to the bad season and the consequent unemployment of field labourers; and in grazing to the increased area of closed worked coupes which offer temptation to illicit grazing owing to the good fodder fostered by closure.

The District Forest Officers of the other divisions in which there has been increase—*Chingleput*, *Chittoor* and *North Vellore*—ascribe it to greater activity and vigilance on the part of the protective staff.

15. The three *Cuddapah* divisions show small decreases in detection. Non-co-operation had died down by the beginning of the year and cannot be said to have affected the number of cases appreciably.

The employment of punitive police in *West Cuddapah* had a very marked effect not only in that division but throughout the *Cuddapah* district and even across the border in the adjoining parts of the *Chittoor* district.

The decrease in the number of cases reported in *West Cuddapah* is not as obvious as it should be as the figures include 44 undetected offences of setting fire whereas previously these were not included in the return. Undetected cases are treated differently in each division and I am of opinion that the figures are meaningless and that it would be better to omit them altogether.

The District Forest Officer, *West Cuddapah*, expresses his indebtedness to Mr. E. L. Saunders, District Superintendent of Police, and to Mr. E. H. H. Lewis, who succeeded him on his transfer, for personal interest and assistance at a troublesome period.

With the permission of the Deputy Inspector-General a Sub-Inspector of Police in *North Cuddapah* was presented with a watch by the Forest Department as a recognition of valuable assistance in connexion with organized forest offences prompted by the non-co-operation agitation. The presentation was made in public on the occasion of the Vernacular Training School prize and sports day at Cuddapah.

In all Rs. 446 were spent in rewards to subordinates and others in connexion with the detection of forest offences.

16. One thousand nine hundred and eighty-eight cases were taken to court. Of which 564 were acquitted on payment of compounding fees and only 131 on their demerits, which gives a percentage of genuine acquittal of 9·2 which is not unsatisfactory all things considered.

17. The total number of cases compounded was 5,974 and the aggregate of fees Rs. 70,201 with an average of about Rs. 12 per case against 4,766 and Rs. 68,685 in the previous year with an average of about Rs. 13 per case.

18. It is interesting to compare the rates of compounding in cases occurring on reserved forests and lands (by the Forest Department) with that for unreserved lands (Revenue officers). Taking the aggregate we find an average for reserved lands of Rs. 12 per case and Rs. 5 per individual and for unreserved lands of Rs. 11 per case and Rs. 6-6-0 per individual. But this comparison is not quite equitable since a large proportion of the cases in reserved forest are grazing cases concerning each a considerable number of cattle and especially goats when a heavy compounding fee

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is justifiable; whereas the offences on unreserved lands are the removal of petty items of forest produce and do not include grazing. Eliminating the grazing cases, therefore, we find that the offences in reserved forest were compounded on an average for Rs. 7–1–0 per case and Rs. 2–8–0 per individual. This seems to me to dispose of the charge of unnecessarily severe compounding fees imposed that is often indiscriminately and irresponsibly formulated against Forest officers.

19. There is a marked improvement in the rapidity in which forest offence cases have been disposed of and very few cases now remain on the books for over six months. The District Forest Officers are commended for their action in this matter and it is hoped that they will not relax efforts, for continuous and constant pressure alone brings about such good results.

(*b*) *Protection from fire.*

20. There was a decrease in the area under fire protection of 207 square miles. This was almost entirely in the *North Cuddapah* division where, fire lines having failed to achieve satisfactory results, it was sought to protect all the forests except the Nallamalai Hills without fire lines and by means of watchers alone. Unfortunately this attempt coincided with the outbreak of non-co-operation and it was also a very dry season with the result that enormous areas were burnt over.

There was a small reduction in area attempted in the *North Vellore* division through comprising only coupes worked within five years instead of up to ten years after working.

The decrease was slightly counterbalanced by increases in the *West* and *South Cuddapah* divisions.

21. The total area burnt over was 458,371 acres against 130,106 acres in the previous year.

The aggregate burnt in the specially-protected areas was 285,447 acres or 32 per cent of the area attempted against 105,634 and 10·3 per cent in the previous year.

The reasons for the increase have already been stated above. The cost per acre of successful protection was annas 0·4 or about Rs. 16 per square mile as against 0·5 or Rs. 20 in the previous year.

22. Out of the total area burnt under special protection no less than 258,313 or 90 per cent were in the three *Cuddapah* divisions, with over 37 per cent failures; the remaining four divisions contributing only 27,029 acres burnt, which is 14 per cent of the area attempted.

During the year the whole question of fire protection in the *Cuddapah* district was fully discussed and it was decided as a last resort to have recourse to early burning and this system was adopted throughout the *Cuddapah* district for the fire season of 1923, which will be reported on in the next administration report. The advisability of introducing early burning in other divisions was considered, but was deemed suitable only in small portions of *Chittoor* and *North Vellore*.

The cost of protection, such as it is, has proved far cheaper with early burning; it should be further cheapened with experience. Nothing of value, of course, can yet be stated as to the results of this practice especially as this year of first introduction proved most unfavourable for the purpose; heavy rains in January deferred the burning which remained incomplete owing to the difficulty in getting the forest to burn at all till so late a date that further operations had to be stopped as being too dangerous.

23. It is of interest to record that the villagers adjoining the forests strongly disapproved of early burning and declined to assist on the ground that the grass would be destroyed for such grazing as there is at that season and for thatching purposes. It is easy to follow their reasoning; they want early green grass but want the old grass as long as possible and from their point of view the burning should only shortly precede the rains. As usual, they want everything in all ways. It is to be hoped that departmental early burning will induce the people to lay in stocks of thatch grass and possibly of fodder before the forest is burnt over.

Third Circle.

(c) *Protection against Cattle.*

24. The following table compares the areas closed and open to grazing during the two years—that under report and the previous year :—

	1921-22.	1922-23.
	SQ. MILES.	SQ. MILES.
Closed to all animals—		
Whole year	831	711
Part of year	659	806
Open to all animals except goats—		
Whole year	2,518	2,483

The reduction in area closed during the whole year is due to a revision of the grazing schemes and to considerable areas previously closed, particularly in the *North Vellore* division, being thrown open as there was not sufficient justification for closure.

In some cases coupes of less than ten years of age were also opened to grazing, the Conservator's prior sanction being obtained in each case.

On the other hand coupes worked during the year were closed.

25. There were fewer kanchas left unsold in the *Nellore* division than in the previous year as the non-co-operation agitation had deceased.

26. The number of cattle for which grazing permits were purchased increased in accordance with the above-noted mutations from 273,683 to 325,855 cow units. This increase is contributed to by all the divisions except *Chingleput* where there is a decrease due to disreservation.

27. There has been an increase from 36,805 to 44,397 in the number of cattle impounded.

This increase is common to all but the *Chingleput* and *Chittoor* divisions. In *South and West Cuddapah* the increase is explained partly by the absence of non-co-operation and the concomitant rescue of cattle and partly to better detection by the appointment of special patrol parties. The increase in *North Cuddapah*, no doubt, is also due to the disappearance of non-co-operation, but the District Forest Officer (Mr. V. Narayana Ayyar) has not thought it necessary to offer an explanation.

In the *Nellore* district there is a decrease in two ranges and this is due in the Kanigiri range to the absence of non-co-operation and in Sriharikota to the introduction of the village-war lump sum payment system.

This decrease is more than counterbalanced by increases in the other four ranges and is due to deliberate trespass into closed coupes where closure has induced better fodder. Probably the dry year is also responsible as there must have been less fodder outside the reserves than usual and this is the reason given for the increase in the *North Vellore* division.

28. The altered system of collecting grazing fees in the Sriharikota range requires a further reference. The system was introduced on account of the difficulty of preventing trespass and impounding the cattle as they are of a semi-wild description. These cattle roam at liberty for the greater part of the year and their capture, even by their owners, entails very considerable labour and time. From time to time various solutions for the problem have been suggested ; from confiscation to shooting of the cattle and even to the deportation of the villages en block.

The system now introduced is that each village pays a lump sum calculated on the last cattle census. The fees which had been raised to Re. 1 per cow unit were simultaneously reduced to 8 annas a head. In consequence the revenue has risen, there have been no impoundings or prosecutions and the people themselves are free of worry. The system, which has been explained and its results stated in two issues of the *Madras Forest College Journal*, is working so far quite successfully.

It is for consideration whether it could not be extended to other forests where the limitation of cattle is not very essential.

Third Circle.

(d) Protection against injuries from natural causes.

29. As adumbrated in last year's report it is ascertained that the *Viscum* growing on Nux-vomica trees in Sriharikota is not as harmful as was thought at one time. Also it appears that the parasite is short-lived and dies off of itself. Moreover, it is reported that an unidentified insect attacks and weakens the parasite without affecting the host tree. On the whole, therefore, there appears to be no cause for alarm and no special steps need be taken. Nevertheless, the infection should be watched and if necessary the removal of the parasite can be undertaken. If it becomes necessary to do so, however, it must be noted that the operations should be effected rapidly over a large area ; piecemeal work is useless as reinfection from adjoining areas is rapid.

30. The only other operation of any extent undertaken was the eradication of lantana from the Horsleykonda reserve in the *Chittoor* district. A revised scheme for this work has been drawn up and is now being carried through steadily. There is already a remarkable improvement in the valley below the bungalow and on the bungalow plateau. In a restricted area, such as we have here, such eradication can be effective. As already pointed out, however, it must be accompanied by the replacement of the pest by something better and definite instructions have been issued for the planting and dibbling of the area cleared.

31. *Euphorbia* and thorny climbers have been cut in the coupes.

Mr. Littlewood has definitely shown that in dry tracts, at least, bothersome thorny climbers such as *Pterolobium*, *Zizyphus*, *Acacia*, *Cassia*, etc., can be killed outright by the proper application of Atlas preservative and this poison should now be more extensively employed.

CHAPTER III.—SYLVICULTURE.

(a) Natural Reproduction.

32. Owing to shortage of rain the year, generally speaking, was a bad one for seed and the survival of seedlings. Sandal and weeds, however, must be excepted ; they seem to thrive whatever the conditions.

(b) Artificial reproduction.

33. No new areas were dealt with in any of the divisions.

Owing to want of rain the sowings of sandal in some localities are reported to have failed, but on the whole the work of past years in this direction is proving a success as small *foci* are being established in a multitude of localities from which the species is expected to be spread through the agency of birds. This is no false hope in suitable localities, and sandal is extremely adaptable, as it is already taking place in more or less abundance according to the age of the parent trees and local conditions.

These operations are carried out mainly through the work of the existing staff and cost little beyond the distribution of the seed.

As an example of the power of sandal to withstand adversity and to establish itself in spite of difficulties may be cited the case of the lower slopes of Horsleykonda. Sandal was introduced some fifty years ago on the small plateau where the bungalow is located. In about 1912 the then District Forest Officer (Mr. Arbuthnot, I believe) wished to establish it on the northern slopes down to the foot hills and had seeds sown and possibly plants transplanted. As the upper slopes had been closed to grazing partly to foster the spread of sandal the people feared that its establishment below would lead to a similar restriction and the graziers uprooted all seedlings they came across. In spite of these indelicate attentions sandal has appeared and is now established almost to the foot.

Nevertheless, the most favourable sites should be selected for the initial ' topes ' so as to ensure vigorous and rapid development.

34. In the Palar plantations of the *North Vellore* division about 86 acres were sown with *Pithecolobium dulce (Korakapalli)*, *Pongamia glabra*, *Cassia siamea* and *Albizzia Lebbek*, with the object of establishing species that will be self-reproductive. It is too early to judge of results. Other species are also to be tried including *Prosopis juliflora*, seeds of which are being procured from Lahore. *Third Circle.*

(*c*) *Cultural Operations.*

35. There were sundry attempts aiming at the improvement of the growth by dibbling seeds in various localities, including the sowing of grass seeds in pasture lands in the *Nellore* and *Chingleput* divisions, with varying results.

The most important was the sowing of seeds on the area (200 acres) from which lantana was removed in the Horsleykonda reserve of the *Chittoor* district. The result was poor owing partly to a bad season and partly to bad seed. A more systematic attempt is being made in the current year. It is essential that such work should receive proper supervision. The Ranger in whose range this reserve lies (Madanapalle) has little to do ; he can and must give this work his frequent personal attention. Recently seeds of *Acacia decurrens* from The Nilgiris have been sent to him for trial.

The subject has been fully dealt with in a recent inspection note of the Conservator.

(*d*) *Operations for the improvement of the growing stock.*

36. It is difficult to define a boundary between the last two sections and this one and some items could be included in all three.

The alleged improvement fellings noted in the next chapter might be held to fall under this heading and also much of the pure coppice working.

Apart from these and the cutting of creepers in coupes, the removal of superfluous growth, especially thorny shrubs, in some of the grazing areas in the *Nellore* district was undertaken. Special operations having proved not very successful and rather costly a different method was adopted. A special whole-time man on a monthly wage was employed on a definite, restricted area. He was provided with a hut built in the area and with tools and his sole work is the rooting up of this unwanted growth. This has proved both more economical and more effective and is being continued. Attempt is also being made to induce the users themselves to clear such growth by leasing these areas on special terms.

In the old and current Mamandur improvement felling coupes in the *Chittoor* district the superfluous limbs of forked trees that had been reserved for the furture crop were removed.

CHAPTER IV.—EXPLOITATION.

(*a*) *System of Management.*

(i) Major Forest Produce.

37. The areas under working are classified as follows :—

System.	Area in square miles.	Percentage.
Simple coppice	149	16·6
Coppice with standard	225	25·0
Improvement fellings	147	16·4
Not under any definite system	377	42·0
Total ...	898	100·0

This is a total of eleven square miles more than reported last year and there are also some slight differences in the detailed figures.

The increase is due to the addition of 17 square miles in the *West Cuddapah* division comprised in the newly sanctioned Palkonda working plan under the improvement felling system. This is partly counterbalanced by disreservation of some areas and the cancellation of one working plan owing to lack of demand. The changes in detail are due partly to the above and partly to the change in working in two or three cases from coppice with standards to pure coppice.

Third Circle.

(ii) MINOR FOREST PRODUCE.

(1) Bamboos.

38. There was no change in area or method of working.

(2) Miscellaneous.

39. The price of *nux-vomica* remained low and the season was very unfavourable through the partial failure of rain.

The demand for tanning barks showed a slight tendency to rise. There was an increased demand for the bark of *Cassia fistula* and this item was sold again after a period of rest. All the leases were restricted to one year.

In the Sriharikota forests of the *Nellore* district, minor produce was collected departmentally by the Yenadis. In the *North Vellore* division nux-vomica was collected departmentally as the bid for the lease was unsatisfactory.

Elsewhere all items of minor produce were leased for collection except in a few cases in which the bids were unsatisfactory.

40. The removal of manure leaves is still prohibited in the *North Vellore* division, but is allowed on permit elsewhere. It is only in the *Cuddapah* district that this concession is availed of to any extent.

Near the close of the previous year the seigniorage for manure leaves in the *Cuddapah* district (all three divisions) was reduced from Rs. 2 to Re. 1 per cart-load and restrictions were placed on the use of the leaves of certain timber species. It is reported that the restrictions were generally observed and that the reduction in the fee has had a beneficial effect in reducing illicit removals and in enhancing the revenue. This is illustrated by the following statement:—

Year.	Seigniorage rate.	Number of cart-loads removed on permit.	Revenue.	Number of cart-loads seized as illicit removals.
1919-20	2	1,077	2,154	935
1920-21	2	780	1,560	184
1921-22	2 1	1,321	3,006	1,251 *
1922-23	1	4,608	4,608	202

* Change of rate was effected in December 1921.

The demand fluctuates with the season, as good rains mean more wet cultivation and a bigger demand for manure leaves. The year under report was a *bad* season.

(*b*) *Agency of Exploitation.*

(1) DEPARTMENT AGENCY.

(1) Major Produce.

41. The *South Cuddapah* division was the only one in which any regular exploitation of major produce took place. As there was no offer for the purchase of the standing growth in four improvement felling coupes they were worked departmentally.

Rupees 2,507 were spent on the whole work and the realizations amounted to Rs. 5,378, giving a net profit of Rs. 2,871, with a small stock still on hand. These figures do not include any part of the salaries of the permanent establishment but do include those of the men specially employed for the work.

42. Other items collected departmentally were obtained from the clearing of boundaries or specially felled for departmental works. A small quantity of timber was supplied experimentally to the Madras Pencil Factory.

(2) MINOR FOREST PRODUCE.

43. Except in the Sriharikota Reserve of the *Nellore* division, where all minor produce is collected departmentally and the collection of nux-vomica in the *North Vellore* division, there was no departmental work under this head.

Third Circle.

(ii) By Purchasers.

44. The bulk of the exploitation of minor forest produce is effected by lessees and permit holders.

(iii) Free Grantees.

45. Free grants were almost entirely for the reconstruction of dwellings destroyed by fire. The exceptions were for the construction of huts in the Kavali (*Nellore* district) criminal settlement and the construction of an Adi-Dravida village school. In both cases the Chief Conservator's sanction was obtained.

The following statement shows the quantity and values of free grants.

Timber.	Bamboos.			Grass.	Other minor Forest Produce.	Total.
C. FT	RS.	NO.	RS.	RS.	RS.	RS.
60,000	7,703	42,491	370	174	473	8,720

(iv) Rights and Privileges.

46. Two villages in the *North Cuddapah* division have the right of free grazing over an area of 820 acres in the Lankamalai Reserve.

A similar right is possessed by the villagers in *South Cuddapah* in the Settigunta Reserve.

A concession to graze 344 bulls at lower rates in the Palkonda Reserve was granted in 1895 and is still availed of.

In the *North Vellore* division certain villagers have the right to the usufruct of a number of fruit trees near their village.

(*c*) *Outturn and sources of forest produce.*

47. The subjoined table compares the results of the past year with those of the previous year.

Agency of exploitation.	Timber in thousands of cubic feet.		Fuel thousands of cubic feet.		Bamboos value.		Miner forest produce and grazing value.	
	1921-22.	1922-23.	1921-22.	1922-23.	1921-22.	1922-23.	1921-22.	1922-23.
					RS.	RS.	RS.	RS.
1. By Government Agency ..	9	24	152	166	133	224	68,270	18,955
2. By purchasers	632	697	6,750	7,312	27,859	34,056	3,54,592	3,93,560
3. By free grantees	59	60	..	..	392	370	944	847
4. By right holders and privileges.	..	..	..	..	..	..	86	123*
Total ..	700	781	6,902	7,478	28,384	34,650	4,23,892	4,13,285

* These figures are not quite correct.

48. The increase under the departmental removal of timber is due to four improvement felling coupes being worked in the *South Cuddapah* division, encouraged by the results from one that was worked in the previous year.

The increase under bamboos is due to better demand and more coupes being sold in the *North Vellore* division.

The considerable fall in the revenue from minor forest produce collected departmentally is due to the fall in value of nux-vomica (Rs. 30 to 37-8-0 per candy against Rs. 67) and to the smaller yield owing to a bad season. Also the full quantity was not sold in the year, and part of the realizations have been credited in the current year.

This is made up in part, in the total, by somewhat better results in the sales of tanning bark leases and in the grazing collection.

The other differences fall within the normal limits of fluctuation.

Third Circle.

CHAPTER V.—FINANCIAL RESULTS.

49. The subjoined statement compares the results of the year with those of 1921–22 and the previous years.

	Average for 5 years ending with 1921–22.	1921–22.	1922–23.
	RS.	RS.	RS.
Revenue	7,25,990	7,11,716	6,91,975
Expenditure—			
B. Conservancy and Works.	1,98,682	1,82,855	1,44,437
C. Establishment ...	4,01,819	5,60,755	5,41,798
Total ...	6,00,501	7,43,610	6,86,235
Refunds ...	10,510	10,748	3,114
Total ...	6,11,011	7,54,358	6,89,349
Net result ...	+ 1,14,979	— 42,642	+ 2,626

It is satisfactory that the considerable deficit of the previous year has been converted into a surplus, though a small one, in spite of a bad season and a further fall in revenue.

This was brought about by rigid economy both on works and in establishment. Only revenue producing works or those most urgently required were undertaken and the establishment was reduced wherever found possible. The reduction of establishment is still under consideration and further, though small, economies are likely to be effected.

50. Again only the *Nellore and North Vellore* divisions showed a net surplus, the deficits in the other divisions varying from Rs. 440 to Rs. 57,908.

51. The decrease in revenue is due almost entirely to the fall in realizations from nux vomica as already explained. There was a smaller fall under realizations on fuel due to fall in demand in most divisions and to poorer areas being worked on the whole. This fall is partly compensated by improved sales of bamboo coupes and in realizations on minor produce other than nux vomica and also in the grazing returns. The latter improvement was due to increased area being available for grazing in the *North Vellore* division and to increased receipts in the three *Cuddapah* divisions owing to penning inside the forests being allowed once more.

52. The decrease in expenditure under B and C has already been explained. For the latter must also be added the restriction on touring and the revised travelling allowance rules introduced from 1st September.

53. In view of the financial stringency and the rigorous cutting down of expenditure on works, no good purpose will be served in working out percentages devoted to the various kinds of outlet for expenditure since they are forced and not normal.

CHAPTER VI.—RESEARCH AND EXPERIMENTS.

54. The experiments detailed in last year's reports were continued and the results of the year recorded. None have reached completion and no useful conclusions can yet be drawn.

The 'experiment register' for recording *approved* experiments in the Conservator's office was posted up to date. It serves the useful purpose of securing continuity in experiments in spite of the transfer of the initiating officer and observation at the same period each year.

55. The isolated sandal plants on an otherwise desert bund at Horsleykonda were kept under observation and the area was kept clean weeded. The plants, in spite of their isolation for nearly four years are still quite robust though they can have no hosts but themselves. A fuller report has been published in the *Indian Forester*.

56. *Rooting of coppice.*—Observations were again made by the Vernacular Training School in the *North Cuddapah* division that tend to confirm those made in the previous years which indicated that new roots are formed only when the old ones begin to decay. Similar work in other localities, especially under different climatic conditions, is desirable.

CHAPTER VII.—ADMINISTRATION.

57. There was no change in the territorial jurisdiction during the year under report. *Third Circle.*

It has been proposed to transfer the Sriharikota Range from the *Nellore* to the *Chingleput* division; the change had not been effected during the period under report, though it is likely to be carried out shortly.

The transfer of a section of forest in the south of the Palmaner taluk from the charge of the *Chittoor* District Forest Officer to that of the *North Vellore* District Forest Officer is also under consideration.

58. There has been the usual tale of malaria, but not more than normal.

The sanitation of Mamandur continued to receive serious consideration. A fuller investigation showed that the difficulty regarding water had been exaggerated and it is anticipated that draw wells can meet the demand at all times.

A belt of vegetation was cleared round the range quarters but the cost proved far greater than was anticipated. The whole question was further investigated by the new District Forest Officer, Mr. Cornwell, in April and May. He has submitted a detailed report which is now under consideration by the Conservator and it is hoped to put the whole problem on a more satisfactory footing.

Deaths during the year were from *malaria*—one range clerk and two children of a forest guard.

from *dysentery*—one bungalow watcher.

59. *Tour of Inspecting Officers.—Conservator.*—The Conservator spent 253 days on tour and visited all the divisions but that of *South Cuddapah*. Inspection notes were submitted to the Chief Conservator wherever there was matter of sufficient importance for record. All the District Forest offices were inspected.

District Forest Officers.—All officers spent the prescribed minimum or more on tour. All range offices but four were inspected during the year and these four were inspected just after the close of the year.

60. *Audits.*—All the District Forest offices were inspected by the Audit officers with satisfactory results.

61. *Recruitment.*—Messrs. P. W. Davis and J. A. Wilson, Assistant Conservators of Forests, joined the department on first appointment in December and were attached to the Conservator for training.

Madras Forest College.—One officer returned from the College as a supernumerary ranger. One forester was deputed and joined the College in July. All the four students at the College (three in the senior division and one in the junior) have been well reported on. One of the seniors headed the class and also was awarded 'Colours' in two of the College sports. Eventually he secured the Campbell-Walker prize for the best all round ranger. All three seniors obtained the honours certificate in the finals in June 1923.

One forester was given leave and has secured admission to the Forest College as a private student and has done creditably.

62. *Vernacular Training School.*—The 1922 session was wound up in August and has been separately reported on.

The current year's session began in January under the direction of Honours Ranger M.R.Ry. T. M. Doraiswami Pillai with 30 students of which nine are from the II Circle. Owing to the illness of the officer originally selected as Assistant Instructor and shortage of officers, a probationary ranger was borrowed from the II Circle. A separate report will be submitted in due course after the winding up of the session in August 1923.

Five subordinates from *North Vellore* and *Chingleput* were deputed to the Vernacular Training School in the IV Circle, where the instruction is in Tamil.

63. *Conduct of Establishment.*—One ranger is under prosecution for extortion.

There are two or three rangers who are most unsatisfactory and who cannot be placed in charge of ranges with any confidence. It would be an advantage to Government if they could be retired on proportionate pension.

Third Circle.

These apart the conduct of the Rangers has been satisfactory.

The conduct of the rest of the lower establishment is not as satisfactory. There have been the usual dismissals, and other punishments too numerous to be detailed here.

The fact is that service in the lower ranks of the Forest Department is far from popular and, with comparatively few exceptions, attracts the least desirable candidates many, if not most, of whom enlist with the object of enriching themselves by illicit methods as rapidly as possible before they are found out and ejected.

The Vernacular Training schools are having a good effect, but this will be very greatly stultified if the emoluments are retrenched and if they are not cut down even more in other departments.

I write these words as there seems to me at the moment considerable danger of retrenchment in the Forest Department without a corresponding cut in others. I trust that it is recognized that the life of a Forest subordinate is uncongenial to the mass of the population and that therefore it is usually only after failure to secure appointment elsewhere that a man offers his services in the Forest Department. It follows that in the Forest Department the subordinates should receive somewhat higher emoluments than are current in others.

One Ranger was granted long leave and has proceeded at his own expense for further Forest training at Edinburgh with the hope of qualifying himself for either the Imperial or Provincial Forest services.

CHAPTER VIII.—GENERAL.

(i) Formation and management of Panchayats.

64. A revised system of Forest Panchayat management was introduced during the year, but its activities could not, of course, have very much direct effect till after the close of the period under report.

Two Panchayats in the *Chittoor* district, which had been dissolved, were reconstituted during the year.

Five panchayats in the *Chingleput* district were dissolved for apathy or because they did not wish to continue and the areas were resumed.

One panchayat in the same district and three in the *North Vellore* division were dissolved as the areas have been disreserved for cultivation.

The management of panchayats prior to the introduction of the new method of control is reported to have been unsatisfactory with a few exceptions; it is confidently hoped that the new system will effect a marked improvement.

65. In each of all of the divisions of the circle, a list has been drawn up of all the areas which can be handed over for Panchayat management as soon as panchayats can be formed. These lists have been approved by the Conservator and will now be submitted for the Chief Conservator's sanction. The District Forest Officers have been instructed to collate the information for each reserve that will be required by the Forest Panchayat Officer.

(ii) Conferences and Meetings.

66. A circle conference, at which all the District Forest Officers were present, was held at Madanapalle in June. A variety of subjects was discussed, but the main object was the simplification and curtailing of office work.

Mr. A. M. C. Littlewood, District Forest Officer, *Chittoor*, had gone deeply into the matter and the proposals considered were very largely made by him and his Range Officers.

Many recommendations were made and such that could be adopted under the Conservator's authority were put into effect at once resulting in a definite saving of work. The resolutions requiring higher sanction were submitted to the Chief Conservator for orders.

A meeting with the Collector of *Cuddapah*, the three District Forest Officers and the Revenue Divisional Officers of that district was attended by the Conservator in August 1922, at which several forest questions were discussed.

A conference was held with the District Forest Officer of *Cuddapah* to consider the subject of fire protection as a result of which 'early burning' was substituted for the ordinary method of fire protection throughout the district. *Third Circle.*

Several meetings with ryots were held in various camps, at some of which the Conservator was present with the object of trying to understand the peoples' point of view.

(iii) Measures for the Improvement of Local Supplies and Facilities.

67. The whole management of grazing and distribution into blocks in all divisions was scrutinized with a view to ascertaining whether there was justification for closure in every case and whether a rearrangement of blocks was called for with due regard for watering facilities and other drawbacks of the divisions into blocks. This resulted in considerable changes, mainly in the *Chittoor* and *North Vellore* divisions, both as regards the divisions into blocks, which were reduced in number, and the throwing open to grazing of some of the closed areas.

68. Repairs were effected to some wells and watering places.

Private people are encouraged to make and restore watering sources. One new pool was constructed by such Agency at a cost of Rs. 500 and another was restored for Rs. 200.

69. The Adi-Dravida Co-operative Society in the *North Vellore* division continued to lease and work a fuel coupe and they constructed a cart-track into the working circle.

Another Co-operative Woodcutters' Society was formed at Ambur in the same division and bought a fuel coupe at the public auction.

Two co-operative societies leased coupes in the *North Cuddapah* division. One of them was very successful and the other, though not a complete success, was not a failure. Both have taken up coupes in the current year and, encouraged by their example, two more societies have applied for similar leases.

This expansion, if slow, is encouraging, and it is hoped that a start will be made in other divisions also.

(iv) Timber Transit Rules.

70. The proposed sandal transit rules for the *Chittoor* and *North Arcot* divisions were under consideration during the year by the Chief Conservator and were also discussed with the members of the Legislative Council for Chittoor as also with other prominent non-officials. A further report on the rules was submitted to the Chief Conservator soon after the close of the year.

The District Forest Officer, *Nellore*, reports that timber transit rules are required for that district but has made no constructive proposals.

Elsewhere there is no complaint except that, owing to a misunderstanding of the rules, some trouble arose on the railway (Madras and Southern Mahratta Railway). The rules were explained to the railway authorities. The misunderstanding was entirely by the railway staff and the forest staff was not at all concerned in the incident.

(v) Jungle Tribes.

71. The only jungle people in any numbers that the department is concerned within the circle are the Yenadis in Sriharikota in the *Nellore* district and the Malayalis of the Javadis in the *North Vellore* division.

The former are mostly employed by the Forest Department in the collection of minor forest produce and the latter have been granted hill village grazing concessions in return for assistance in protection.

(vi) Mining and Quarrying.

72. There is nothing of any importance under this head to report. The District Forest Officer, *North Cuddapah*, reports that 'nothing is known about the prospecting of Galena in Kancherlamorum reserve.' Presumably that is why he says nothing more about it.

(vii) LIVE STOCK.

Third Circle.

73. The live-stock consists of two buffaloes at Horsleykonda and one bullock at Palmaner in the *Chittoor* district and one buffalo at Kambakkam in *Chingleput*. These are entertained to meet the difficulties in watering owing to the distance of the water sources from the bungalows. They are looked after by the local staff without extra cost.

All seem contented and happy and there is no report of non-co-operation on their part.

(viii) VETERINARY ESTABLISHMENT.

74. Nil.

(ix) SUITS.

75. In the Pamaleru suit in the *South Cuddapah* division, the property of the insolvent-defendant was sold, but the result being unsatisfactory a resale has been applied for.

The result of the appeal preferred by the zamindar of Bangarapalaiyam in the *Chittoor* district is still awaited.

In the *Nellore* district a former defaulting contractor has given notice of suits, but these have not been filed and he would be most ill-advised to file them. The papers have been prepared and are kept ready and the suits may be awaited with confidence.

(x) COLLECTOR'S REMARKS.

76. The following forwarding endorsements were made by Collectors when transmitting the District reports.

Collector of Nellore.

" Forwarded.

As far as I have seen, the administration of the Forest Department during the past year in Nellore has been satisfactory. Speaking generally, the ryots do not seem to have much to grumble at—or at least they have not put anything much before me except in parts where they want the Kancha system abolished and the old permit system reintroduced—for obvious reasons. Their only real complaint is that many of the reserves (i.e., in the plains), are getting so choked up with cactus and thorny bushes that grazing in them becomes impossible and from what I have seen of many of these so-called 'Forest reserves', their complaint is perfectly justifiable, many of them being impenetrable thickets, while others are deserts of boulders and cactus."

Collector of Chittoor.

" Forwarded.

I trust the proposals to place much of the forests under panchayat management will have the result of reducing dissatisfaction on the part of the ryots of the district."

Collector of Chingleput.

" Forwarded.

I consider the report to be fairly satisfactory."

Collector of North Vellore.

" Forwarded.

It is a pity that the work of the panchayats was not satisfactory. I think that the department should not relax its inspection and advise merely because there is a Forest Panchayat Officer. This officer, whom I know well, is not a 'Forester' in the technical sense, and can only supervise organization of panchayats—non-technical work generally speaking. In the South, Mr. Gaudoin seems to be getting some good results as he 'freely mixes' with the panchayatdars."

Collector of Cuddapah—Nil.

C. FISCHER,
Conservator of Forests, Third Circle.

16*th July* 1923.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1923.

FOURTH CIRCLE.

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. ALTERATION IN AREA.

Reserved forests.—The area of reserved forests decreased from 2,702 square miles to 2,697 square miles chiefly due to deforestation. *Fourth Circle.*

Reserved lands.—The area is the same as in last year.

2. FOREST SETTLEMENT.

2. Six blocks were finally settled during the year.

3. DEMARCATION.

3. Eleven miles of boundary were finally demarcated during the year.

4. FOREST SURVEYS.

(a) By the Survey of India Party.

4. Nil.

(b) By Madras Survey.

5. The Party continued to work in the Vriddhachalam and Tirukoyilur taluks of the *East Salem* division. In *South Salem* division, this Party has completed work in Kulitalai and Perambalur taluks and the work in Udayarpalayam taluk is in progress.

(c) By Departmental Survey.

6. The survey of coupes was as usual done departmentally.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. REGULATION OF MANAGEMENT.

Preparation and control of regular working plans.

7. *Preparation.*—No new regular working plan was prepared and sanctioned during the year.

A revised working plan for the Udayarpalayam Kassan forests in Perambalur range and a scheme for the removal of manure leaves from certain reserves in Musiri, Perambalur and Namakkal ranges in *South Salem* were sanctioned by the Chief Conservator. A new bamboo working plan for the *West Vellore* division, a scheme for working the Sandalwood areas in the Shevaroys West range, a scheme for the six reserves around Thoppur in *Central Salem* and a tentative scheme for working the lower slopes for the Gangavalle and Varagur reserves for fuel were sanctioned by the Conservator during the year. The revised working plan for the Kallavi and Elavambadi group of reserves which was under correspondence for a long time has just received the Conservator's approval.

Fourth Circle.

8. *Control.*—The prescriptions of the following working plans were adhered to with small exceptions:—

(1) Sandalwood working plan for the Javadis and Yelagiris in the *South* and *West Vellore* divisions;

(2) Sandalwood working plan for the Hosur taluk, *North Salem* division, except in areas affected by spike;

(3) Preliminary working-plan for the sandalwood areas in the other three *Salem* divisions;

(4) Working plan for the Kavaramalai working-circle in *Central Salem*;

(5) Working plan for bamboo and minor forest produce in *South Vellore*, and

(6) Working plan for the fuel areas in Vaiyampatti, Thammampatti, Perambalur and Namakkal ranges in the *South Salem* division.

The prescriptions of the Hosur Sandalwood working plan for the seven felling series in the Denkanikota range were suspended with the sanction of the Chief Conservator owing to the outbreak of spike and the consequent concentration of the staff on the extraction of the affected trees. The other working plans are either obsolete, defective or out of date. Instructions have been issued to the District Forest officers, *South* and *West Vellore* for the preparation of a single working plan for the whole of each division and considerable progress has been made in this direction.

2. Communications and Buildings.

(a) *Roads and Bridges.*

9. The expenditure on new works and repairs during the year was Rs. 51,292 and Rs. 16,093 respectively against Rs. 16,555 and Rs. 4,537 in the previous year.

Javadi Road works.—The Amerdi-Nadanur road was completed during the year and handed over by the Forest Engineer to the District Forest officer, *South Vellore*, in April 1923. The amount spent during the year on this road was Rs. 27,062 including cost of maintenance and repairs. *Komattiyeri-Patrakad road.*—The work on this road was at a standstill until August 1922 when orders were issued to restart and complete the road. All the works on this road have been completed with the exception of the bridge across the Patrakad stream, two small culverts and a little earthwork. The expenditure on this road was Rs. 30,423 including cost of maintenance and repairs.

The chief items of new works were the further extension of the Kottapatti-Veeramalai road and the construction of the cart-track from the Andimadam-Vriddhachalam Local Fund road to Kanguli reserved forest in *South Salem*. No new work was undertaken in other divisions.

(b) *Buildings.*

10. The cost of new buildings and the maintenance of existing ones (including the pay of watchers) during the year was Rs. 2,517 and Rs. 11,191 respectively against Rs. 6,634 and Rs. 12,009 in the previous year. The important new buildings constructed were—

South Vellore—

(1) Inspection shed at Pakkam; and

(2) part construction of kitchen and godown at Pavunjipattu.

West Vellore—

Part construction of the Range office at Krishnagiri.

South Salem—

(1) Subordinates quarter at Kalpatti; and

(2) Kitchen and servants quarters to the Valapur rest-house.

(c) *Miscellaneous.*

11. The cost of new works and repairs was Rs. 314 and Rs. 672 respectively against Rs. 273 and Rs. 497 in the previous year. The expenditure on new works was on the construction of a draw well at Pudur and the completion of the boring operation at Kavalur in the *West Vellore* division. The pump at Kavalur is said to be working fairly satisfactorily. The expenditure on repairs was mainly on the improvement of the existing sources of water-supply.

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3. Protection of Forests.

(*a*) *General Protection.*

12. The following statement shows the offences registered during the year under report.

	1922-23. No.	1921-22. No.	
Injury to forests by fire	319	349	decrease.
Unauthorized felling	7,731	6,883	increase.
Do. grazing	1,636	1,333	,,
Other offences	443	355	,,
Total ...	10,129	8,920	

The decrease under injury to forests by fire is small and calls for no remarks. The increase under unauthorized felling, grazing and other offences, is reported to be due to better detection by the patrol parties, to the vigilant watch kept by the beat subordinates and the Panchayatdars under the Forest Village system in *South Vellore* division.

Cases brought to trial.

Year.	Number.	Convictions.	Acquittals.	Percentage of failure.
1921-22	2,454	2,331	123	5·52
1922-23	2,215	1,981	234	10·56

The increase in the percentage of failure was in the *West Vellore*, *East*, *Central* and *South Salem* divisions. A large number of cases taken to court ended in acquittal. In *West Vellore*, a good many unsound cases were put up. The District Forest Officer has had to get rid of some undesirable subordinates in this connexion.

13. A sum of Rs. 72,944 was collected as compounding fees during the year against Rs. 62,658 in the previous year. The instructions issued in G.O. No. 1990, Revenue, dated 13th June 1910, were generally followed in fixing compounding fees.

Patrol system.

14. The patrol system was in force in *South Vellore*, *Central* and *South Salem* divisions and has given satisfactory results during the year. The special patrol party in *South Salem* secured not only better protection but also booked many big goat browsing cases and increased the revenue by constantly making unexpected checks of permits. The revenue collected for the grazing and removal of manure leaves in this division has risen from Rs. 25,882 to Rs. 27,741 in the case of the former and from Rs. 28,062 to Rs. 32,216 in the case of the latter. Some of the subordinates who obtained these good results were given promotion by the District Forest Officer as an encouragement.

Rewards.

15. A sum of Rs. 280–8–0 was distributed as rewards in *South Vellore*, *East Salem* and *South Salem* divisions in important cases of sandalwood smuggling and goat browsing.

(*b*) *Protection from fire.*

(Calendar year 1922.)

16. The area which was under special protection was 1,096 square miles as compared with 1,066 square miles in the previous year. An area of 1,013 square miles was successfully fire-protected at a cost of Rs. 5,552 during the year. The percentage of failure being 4·97 against 1·53 in the previous year. The increase was in all districts and due to the exceptionally prolonged drought and want of timely rain in consequence of which grass and dead bamboos became highly combustible. In *South Salem*, the Malayalees are said to have set fire to the adjacent

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unreserves to get fresh grass and this fire sometimes extended to the reserves. The Malayalee villages suspected to be mostly responsible for it were not paid the usual reward for this year.

17. *General protection.*—The area under general protection was 1,532 square miles against 1,564 square miles in the previous year, the percentage of failure being 8·39 against 1·44 in the previous year. The reasons given for the failure under special protection hold good here also. The area burnt was 127 square miles.

Appendix A shows details and origin of fires.

(*c*) *Protection from cattle.*

18. There is an increase in the number of cattle impounded in *West Vellore*, *North*, *Central* and *South Salem* divisions, and Appendix B shows details. The increase is due to successful detection of cases relating to evasion on the part of the ryots to take out permits and efficient check by the special patrol party. The incidence of grazing fell during the year from 5·55 to 4·49 acres per cow unit.

(*d*) *Protection against injuries from natural causes.*

19. *Prickly-pear.*—This pest is reported to be found in several forests of the ranges in *East Salem* and its clearance was not proposed as the operation is not economically sound. However, stray patches found during the patrol of the subordinates were uprooted by them free of cost. The regrowth in the upper slopes and Plateau of the Chitteris was cleared by the Malayalees. Owing to prohibitive cost no attempt was made during the year to eradicate this pest in other divisions.

Lantana.—This occurs in small patches in Kudimaduvu reserved forest and proposals for the eradication of the same are pending orders of the Conservator of Forests after inspection. This pest is also reported to be found on the Plateau portions of the Peria-Kalroyans Jaghir and is making its ways towards Nagalur reserved forest. Its eradication is being attended to by the subordinates. In *South Salem*, it is prevalent in Solamathy, T. Kanapadi and Jambuthu reserves and grows densely in the unreserves on the top of Musiri Pachamalais; but owing to financial stringency nothing was done towards eradicating this pest.

Creeper cutting.—This was as usual done in all sandalwood areas.

Loranthus.—The branches of young sandal trees affected by this pest in *South Salem* were lopped off wherever found and the dead and dying trees were removed. It is reported to be found also in the upper portion of the Tagarai reserved forest in the *East Salem* division.

Spike.—This is dealt with under research work.

Bison and Sambhur.—Considerable damage was caused by these animals to the sandal saplings in Valasamalai reserved forest of Tiruvannamalai Range and generally on the Javadis in the *South Vellore* division and to sandal saplings in the Ammapalayam reserved forest in the *East Salem* division.

CHAPTER III.—SYLVICULTURE.

(*a*) *Natural reproduction.*

20. Natural regeneration of sandal was as usual good throughout.

21. *Bamboos.*—The regeneration of *Bambusa arundinacea* is fair as a result of flowering in all the districts except in Central Salem where the fires in many localities damaged the seedlings.

Other species.—The natural regeneration of the following species is reported to thrive well:—

South Vellore.—*Anogeissus latifolia*, *Chloroxylon swietenia*, *Albizzia amara*, *Acacia sundra*, *Pterocarpus marsupium*, and *Hardwickia binata*.

West Vellore.—Teak in the Kottur specially protected block on the Yelagiris. **Fourth Circle.**

East Salem.—*Chloroxylon swietenia*, *Acacia sundra* and *Albizzia amara*.

North Salem.—*Anogeissus*, *Hardwickia binata*, *Melia indica*, *Albizzia Lebbek*, *Chloroxylon swietenia*, *Dalbergia latifolia* and *Shorea Talura*.

Central Salem.—*Frenela rhomboidea* in the Sanniyasimalai Plantation near Yercaud has come up like grass under parent trees which were killed by fire last year. The seedlings have survived their first hot weather.

South Salem.—*Dalbergia latifolia*, *Pterocarpus marsupium*, *Anogeissus latifolia* and *Albizzia odoratissima* on the Kollimalais, *Pterospermum rubiginosum* (Vannangu) in the plain reserves round Silambur in Udayarpalayam Section, and *Acacia planifrons*, *Albizzia amara*, *Canthium didymum*, *Albizzia Lebbek*, *Chroloxylon swietenia*, *Memycylon edule*, and *Pterospermum rubiginosum* in the fuel series.

(*b*) *Antificial reproduction.*

22. In the plantation at Amerdi in *South Vellore*, the operations of the year consisted of replacing casualties in the older areas by direct sowing, in rugged and hilly parts, of seeds of *Pterocarpus marsupium*, *Hardwickia binata*, *Gmelina arborea* and planting out in level portions seedings of Sissoo, Teak, Red Sanders and *Chloroxylon swietenia*. Besides this, 20,000 seedlings were raised in a nursery and planted, and 4,000 teak stumplings of three to four years old obtained from an old nursery were planted. The prolonged drought before the break of the north-east monsoon and the severe hot weather killed a large percentage of seedlings and practically all the transplants, leaving only about 10 per cent of the basketted Red Sanders seedlings and teak stumplings to survive. Rupees 409 was incurred on planting operations during the year against Rs. 422 in the previous year. An amount of Rs. 13 was spent in planting stones and Rs. 24 as pay of watchers for watering the nursery.

Experimental plantings and sowings were carried out at a cost of Rs. 28 in the five acres plot selected in Muttakadu reserve in Gingee Range, *South Vellore* division. About 200 seedlings of Silver Oak put out on the burnt area of Sanniyasimalai hill in *Central Salem* are thriving and 300 stumps were transplanted and 25 measures of teak seeds were sown in Kurumbapatti plantation. In *South Salem* some measure of success was achieved this year from sowing of various species. The District Forest Officer considers the success to be mainly due to the change in the species selected for sowing since he confined himself to the species growing locally in preference to those valuable species which it would be nice to have but which will not grow. The operations in other divisions, viz., *West Vellore*, *East Salem* and *North Salem*, were not successful.

Cultural operations.—Regeneration operations in sandal areas were undertaken, but the result of Sandal sowing was on the whole a failure as usual. In *West Vellore* the operation is reported to be not commensurate with the labour involved, more especially since the species is spreading satisfactorily by itself.

(*c*) *Operations for improvement of the growing stock.*

23. Tending operations were continued in all sandalwood coupes. Creepers and climbers were cut and sandal trees were freed from overhead shade. In *South Vellore* a substantial fence was erected in Patrakad Coupe I to keep out bison which are very troublesome in the specially tended areas. Similar fences will be erected for the other areas if this type of fence proves to be really effective. In *West Vellore* improvement fellings, involving cutting back of hollow, crooked and useless species interfering with the growth of better species, were undertaken at a cost of Rs. 255. The area gone over was 114 acres and the number of trees extracted was 762. In *East Salem* the worked fuel coupes were fenced. In *Central Salem* the contractors were directed to leave a living fence around the fuel coupes and to stuff the openings with cut thorns instead of erecting the perishable type of dry fence.

CHAPTER IV.—EXPLOITATION.

(a) *System of management.*

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24. The total area under working plans during the year was 1,644 square miles and the various sylvicultural systems in force are detailed below :—

	Area in square miles.	Percentage to the total area under working plan.
		ACS.
Clear fellings	49	2·98
Simple coppice	25	1·52
Coppice with standards	660	40·15
Selection fellings	268	16 30
Improvement fellings	415	25·24
Pastoral methods	199	12·11
Forests for which working plans have been prepared but are not subject to any definite system of working.	28	1·70
Total ...	1,644	100·00

The relative area under simple coppice as opposed to coppice with standards is believed to be greater than would appear from the table. One reason for this is the fact that comparatively recent orders authorizing simple coppice, except for the retention of fruit trees, in place of the coppice with standards, often prescribed in the original working plans, have been issued in various cases.

(b) *Exploitation by departmental agency.*

25. The chief item of departmental extraction was sandalwood. A quantity of 269 tons was sold against 304 tons in the previous year, the average rate being Rs. 1,201 against Rs. 1,174 in the previous year and against Rs 1,595 in the year previous to the last

Timber.—A quantity of 1,425 cubic feet of timber was removed from the areas under improvement fellings in *West Vellore* division and 200 cubic feet from the unreserves in *North Salem* were supplied to the Hosur Remount Depot. There has been no proper demand for the timber extracted in the *Wese Vellore* division which is of very poor quality as regards size and shape. In the Inspection Notes on the forests of this division printed in Chief Conservator's No. 212-A, dated 23rd May 1923, instructions have been given to convert the timber into spokes and felloes in the forests on the hills with a view to selling them in the plains. In other districts a small quantity of timber was extracted for building purposes.

Fuel.—Six hundred cubic feet of dead fuel were collected and sold to the pilgrims who attended the Audi festival at Hoganikal in *North Salem.* In other districts a small collection of fuel was made from clearing lines.

Bamboos.—A small quantity was extracted for departmental purposes and for supply to the Remount Depot in the *North Salem* division.

Minor forest produce.—Fourteen quarters of lichens were collected in *North Salem*, but orders were issued not to collect any more as there was no demand. About 174 quarters of Nux Vomica seeds were collected in *Soush Vellore.*

(c) *Exploitation by purchasers.*

26. Except in cases referred to in the above paragraphs, fuel and bamboos were extracted by contractors who purchased the coupes standing. The collection of minor forest produce was also leased out to contractors.

The total outturn from all classes of forests by all agencies is compared with similar details of last year in the following statement :—

Year.	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos.	Gross value of minor forest produce including—grass and grazing.
			RS.	RS.
1921-22	717	1,231	1,03,688	3,11,642
1922-23	701	1,040	1,25,819	3,70,907

The fall in timber is chiefly accounted for by the smaller quantity of trees sold on darkhast lands or by the less assignment of lands on darkhast In the case of fuel, it is due to the fact that in *Central Salem* a portion of the kist collected in March 1923 on account of the fuel coupes of 1923–24 was not credited to revenue as was done in previous years, but was kept in deposit for being adjusted after 1st April 1923 and to the less number of darkhast applications dealt with during the year. The increase under bamboos is due to keen, but not very well-advised, competition. The increase in minor forest produce is due to keen competition among bidders in *South Vellore*, *East Salem* and to the opening of more coupes and the issue of a large number of permits for the removal of manure leaves in *South Salem*. The increase in grazing is due to the throwing open of some reserves in *South Vellore*, *East Salem* and *Central Salem*, and to the efficient check of the village cattle by section officers. *Fourth Circle.*

A special point worthy of note is that four coupes in Tiruvannāmalai range, *South Vellore* division, were sold to the co-operative society during the year in open competition and they were worked very methodically both in regard to fellings and to the system of accounts maintained.

Grazing.—Of the total area of reserved forests and reserved lands, 88·96 per cent was opened to grazing against 87·17 per cent in the previous year. The incidence of grazing in the several districts of the circle is given below:—

Divisions.	Acres.	Cow units.	Number of acres per cow unit.
South Vellore	260,480	64,664	4·02
West Vellore	233,600	63,842	3·66
East Salem	306,560	67,481	4·54
North Salem	304,000	50,008	6·08
Central Salem	248,320	69,136	3·59
South Salem	215,040	34,258	6·28
Total ..	1,568,000	349,389	4·49

The number of cattle grazed during the year shows an increase of 72,002 cow units and the area open to grazing an increase of 28,800 acres. The increase in both the cases is due to opening of some additional reserves to grazing in *South Vellore*, *East Salem* and *Central Salem*, and to the increase in the number of cattle permitted to graze in class II forests of Tiruvannāmalai range as the result of the revision of the scheme in the forest village system during the year in *South Vellore*; also to the admission of a large number of plains cattle in *West Vellore*, and to the enhancement of grazing fees in the Udayarpalaiyam forests of *South Salem* division. The number of animals permitted to graze on payment was 376,089 against 305,770 in the previous year, and the revenue from grazing was Rs. 2,04,090 against Rs. 1,67,929 in the previous year.

Minor produce.—Owing to the resale of *Nux Vomica* on account of the failure of contractor Mr. P. Srinivasa Rao to pay the second instalment and consequent cancellation of his contract, there was loss to the extent of Rs. 4,774 in *West Vellore* and *North* and *Central Salem* divisions. The value of minor forest produce sold during the year was Rs. 1,66,688. There was not much demand for tanning bark.

(*d*) *Exploitation by right-holders.*

27. The rights granted to the villagers at the settlement in V. Kanapadi and Palamalai extension reserved forest in *South Salem* were partially exercised during the year. Free permits for 380 cow units to graze in these reserves and 52 cow units in the Gundur and Ariyur Shola reserves were issued.

(*e*) *Exploitation by free grantees.*

28. The following statement shows the value and quantity of produce removed under this head. The free grants were made chiefly from the unreserves for rebuilding houses destroyed by fire. The usual grant of 10 tons of firewood, 5 tons

Fourth Circle.

for Masimakam festival and 5 tons for Kanthiri festival, was made from the Pichavaram reserve of *East Salem*.

—	Timber in thousands of cubic feet.	Value.	Fuel. In thousands of cubic feet.	Fuel. Value.	Bamboo value.	Grazing.	Other minor forest produce.	Total.
		Rs.		Rs.	Rs.	Rs.	Rs.	Rs.
Right-holders	..	11	..	..	..	81	..	92
Free grantees	37	4,147	..	40	9	..	65	4,261
Total ..	37	4,158	..	40	9	81	65	4,353

CHAPTER V.—FINANCIAL RESULTS.

29. The following statement compares the financial results of 1922-23 with that of 1921-22 (financial year):—

—	1922-23.	1921-22.	Average of the preceding five years.
	Rs.	Rs.	Rs.
Revenue	* 10,84,751	10,41,976	10,84,752
Refunds	25,779	9,964	12,659
Net ..	10,58,972	10,32,012	10,72,093
Expenditure.			
B. Conservancy and Works	1,59,932	1,25,016	1,85,105
C. Establishment	4,19,196	4,20,851	3,24,482
Total expenditure ..	5,78,135	5,45,867	5,09,587
Surplus ..	4,80,837	4,86,145	5,62,506

* Excludes Rs. 760 relating to other circles as explained in the foot-note to Form No. 80.

There was an increase in revenue as compared with that of the previous year of Rs. 42,775 as this was mostly under V and under certian sub-heads of II and it has been explained in paragraph 30 below.

As compared with the average of the preceding five years there was a decrease in revenue of Rs. 3,583.

Under B. Conservancy and Works the expenditure was Rs. 34,923 over that of the previous year and this was chiefly under B-VII (*a*) Roads; the Forest Engineer having spent Rs. 57,929 against Rs. 18,013 in the previous year when there was very little progress on the road works in the Javadis as investigations were being made as to the way in which measurements had been made in the Komattiyeri-Patrakad road and paid for in the past. The increase was also due to expenditure on repairs to roads in the *South* and *West Vellore* divisions.

There was a small decrease of Rs. 2,655 under C. Establishment as compared with that of the previous year.

Of the revenue—

43·90 per cent was derived from major produce of which sandalwood contributed 29·48 per cent of the whole revenue.

11·48 per cent from bamboos.

18·81 ,, from grazing.

14·42 ,, from minor produce.

11·39 ,, from miscellaneous items.

100·00

Under 'B. Conservancy and Works' 25·52 per cent was on exploitation, 70·64 per cent on upkeep and improvement of forests and 3·84 per cent on other miscellaneous items. *Fourth Circle.*

30. The important variations are explained below.

RECEIPTS.

(i) *By departmental agency.*

Sandalwood.—Minus Rs. 52,086. The large decrease is due to the dullness of the market and consequent want of keen competition and this is apparently due to the fact that some of the European firms when ordering sandalwood specify 'Frazerpet' wood. The average rate per ton realized is only Rs. 1,201 against the average rate per ton during the previous five years of Rs. 1,432 realized in Tiruppattur and Rs. 1,539 in Vellore. Besides, the quantity extracted during the year was less by 13 tons in *South Vellore* and by about 7 tons in *Central Salem* than that extracted during the previous year. Further a quantity of about 22 tons of wood extracted in 1920 was sold in 1921. Hence the apparent large decrease, though the average rate per ton realized during the year is Rs. 1,201 against Rs. 1,174 in the previous year.

Minor produce.—Plus Rs. 2,997. The increase is chiefly due to collection of Nux-Vomica in *South Vellore.*

(ii) *By purchasers.*

Timber.—Minus Rs. 167.
Fuel.—Minus Rs. 16,177.
Bamboos.—Plus Rs. 25,513.
Grazing.—Plus Rs. 35,848.
Minor produce.—Plus Rs. 15,634.
Miscellaneous.—V (*a*) Plus Rs. 21,567.

} The variations have been explained in paragraphs 13, 18 and 26 above.

EXPENDITURE.

B. Conservancy and Works.

The chief variation was under roads (plus Rs. 46,693) and it has been explained in paragraph 29 above. The other variations under buildings (minus Rs. 4,935) and under B-VIII (*g*) other works (minus Rs. 5,085) are due to restricted expenditure on account of financial stringency.

C. Establishment.

C–I.—Plus Rs. 10,374. The increase was chiefly under I (*e*) (Subordinate forest and depot establishment) due to actual establishment entertained.

C–II.—Minus Rs. 9,674. Due to the introduction of new travelling allowance rules and to restricted touring.

C–III.—Minus Rs. 3,355. Due to greater economy exercised on account of financial stringency.

CHAPTER VI.—RESEARCH AND EXPERIMENT.

31. *Sandal.*—Ranger S. Nageswara Ayyar continued to be on special duty in connexion with 'Spike'. He has kept the affected areas in Denkanikota range of *North Salem* under observation and has recorded notes dealing with the progress of the disease. The Range officer has been encouraged to go to Bangalore from time to time in order to keep himself posted up to date with the results of the work going on there in connexion with 'Spike'.

The progress of the disease in the observation areas of *North Salem* up to 31st March 1923, is as shown below:—

Locality.	Enumerated.	Spiked.	Dead.
Mahadeswarangudi area	352	307	164
Cairn No. 53 area	513	333	254
Jowlagiri bungalow area	451	445	441

The direction of the spread of the disease is not possible to trace.

There has been no recurrence of spike in the Noganur reserved forest since September 1921 though in the Thalli south area 25 trees, in the Nelkunthi area 65 trees, and at Irupalanayakaneri tank bund 7 trees, were found spiked and taken out. All sandal trees within 50 yards of the diseased ones in the last named area have been removed.

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The chief work of the year in *North Salem* was confined to the removal of spiked trees—

(1) in Thalli reserved forest,

(2) round Jowlagiri reserved forest,

(3) near Tholuvabetta and Gulhatti (including Mahadeswarangudi), and

(4) in Ojjanhatti.

Fresh attacks of spike were observed between January and February 1923 in the Pullahalli enclosure (of Marandahalli reserved forest extension) and in the portion of the Hulibanda reserved forest adjoining the Kolakantapalli spike area of Mysore State, where 23 green-spiked trees were observed within 100 yards of the Mysore boundary.

Coppicing of spiked trees, so far done, has resulted in the production of spiked shoots. Attempts to graft spiked shoots of sandal and of *Zizyphus* on to healthy trees of the respective species was not a success.

During the year under report, a special note on spike was submitted to the Chief Conservator in No. 2159-22, dated 1st February 1923, by Mr. Latham.

In *South Salem* 'Spike' has continued to be prevalent in the following areas on the Namakkal-Kollimalais:—

Shelur reserved forest, Gundur reserved forest, Jambuthu reserved forest, Puliyansholai reserved forest and the adjoining unreserves and also in the Melur, Palamalai, Tenbaranad and Vannadu Kanapadi and Karuppankaduthittu reserved forests of the Musiri Pachamalais.

During the year 3,074 spiked trees were marked in these areas; 680 of these trees giving a rough cleaned outturn of 1,367 quarters of scented wood were extracted and the remaining 2,394 sapwood trees were cut back and burnt.

Obligatory parasitism.—Observations made at Komattiyeri in *South Vellore* and in the B. Melpat series in *West Vellore* with a view to seeing the effect on sandal trees of complete isolation from the roots of other trees showed that the trees inside the trenches were all alive, but looked distinctly less healthy than neighbouring trees growing in the open. At Komattiyeri the trenches are to be widened and deepened this year as it was found last year that the roots of one of the trenched sandal trees had come into contact with the roots of other species below the level of the trench.

Rate of growth.—In *West Vellore* the number of sample plots having become unnecessarily large, it was decided to maintain only four, measurements in which are to be recorded by the District Forest Officer once in three years.

Bamboos.—The experiment with a view to finding out the best rotation, the best method of felling and the length of life of individual culms of *Dendrocalamus strictus* was continued in *South Vellore.*

Yield of leaf-manure.—Experimental cutting was carried out over a 20-acre plot in Jadayagounden reserved forest of *East Salem.* The outturn came to 28 head loads of 56 pounds each per acre as against 19½ head loads last year.

Daincha.—With a view to producing seed for the Agricultural department to distribute amongst ryots for growing leaf-manure, experiments were carried out in sowing seeds of Daincha (*Sesbania aculeata*) in two rest-house compounds (Panamadal and Harur) in *East Salem* and in reserved forest in *Central Salem* and *South Salem.* No success was met with in the open forest, but 60 Madras measures of seed were produced in *East Salem* and handed over to the Agricultural Department. This year further experiments are being confined to enclosed compounds.

CHAPTER VII.—ADMINISTRATION.

32. The chief features in the administration during the year were—

(1) the formation of a special forest panchayat staff with effect from 15th August 1922; and

(2) the introduction of new Travelling Allowance rules.

Mr. H. A. Latham was in charge of the circle up to 3rd February 1923 and Mr. A. Wimbush during the rest of the year.

33. *Tours.*—All the District Forest Officers except those of *West Vellore*, *East* and *North Salem*, spent more than the prescribed number of days in camp. The short touring of these three officers is due chiefly to the orders to reduce touring as far as possible on account of the financial stringency. *Fourth Circle.*

34. *Inspection—By the Conservator—Office.*—Only four of the six District Forest offices were inspected during the year.

Forests.—The forests of *West Vellore* and *North Salem* were inspected by Mr. H. A. Latham, and the inspection notes were recorded in Chief Conservator's Proceedings No. 52, dated 12th December 1922, and No. 41, dated 26th September 1922.

By District Forest Officers.—All the range offices were inspected during the year and the sandalwood sale depots at *Vellore and Tiruppattur* were inspected by the respective District Forest Officers.

35. *List of offices audited.*—All the District Forest offices were audited and the results were generally satisfactory.

36. *Vernacular Training School.*—The session for 1923 was held in the *North Salem* division from 1st February 1923 and it started with 30 students.

As regards the 1922 session, 7 out of the 29 students got first-class certificates and the rest were given second-class certificates. The class on the whole was above the average.

37. *Health of the establishment including an account of the measures to improve sanitation and casualties.*—The health of the establishment is reported not to have been good in all the divisions except *South Vellore* where it is satisfactory to note that men working on the Javadis kept better health than usual.

Casualties.—Two foresters, five guards and one watcher died of malaria during the year.

CHAPTER VIII.—GENERAL.

1. Formation of and Management by Panchayats (to include Forest Village System).

(a) *Formation and Management of Panchayats.*

38. *Formation.*—*North Salem* is the only district in this circle where no panchayats have been formed up to date. One panchayat for class II forests in *South Vellore*, one in *East Salem* and one in *South Salem* division were newly formed during the year.

Management.—A report on the working of class II forests in Tiruvannamalai range under the forest village system was submitted to the Chief Conservator during the year, and the orders of Government were received in Chief Conservator's Proceedings Mis. No. 484, dated 17th October 1922, sanctioning the system permanently with some alterations. The system has worked very satisfactorily. The panchayatdars understand their duties and have not abused the powers given them under the condition of their agreements. There had however been one or two instances of misbehaviour in which suitable punishment was meted out to the defaulting panchayatdars. The protection in class II reserves has considerably improved under the system and as a result the number of forest offences has fallen during the year. As the panchayats in class V forests are under the management of the Special officer, a report on the working of these will, no doubt, be submitted by that officer.

2. Measures for improving local supplies and facilities for obtaining forest produce—include water-supply, fuel, manure leaves, etc.

(a) *Improvement of water-supply in State forests.*

(i) Boring operations.

Nil.

(ii) Improvement of water-supply in Grazing grounds.

39. Nothing was done during the year except that one well in the *Central Salem* division was repaired during the year.

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(*b*) *The supply of forest produce to meet the wants of the people.*

40. This was as usual attended to by the coupe contractors. The co-operative societies in the Tiruvannamalai taluk continued to work coupes during the year and the result was that the sale price of fuel in Tiruvannamalai town was reduced even during the festival time. It is hoped that this method of selling coupes to co-operative societies will be adopted in other districts of this circle as suggested in paragraph 6 of G.O. No. 1478, Development, dated 4th November 1922 (Chief Conservator's Proceedings No. 55, dated 16th December 1922).

(*c*) *Supply of manure leaves.*

41. The growing of Daincha (Sesabania aculeata) for seed in the Central and South Salem divisions proved a failure. On account of keen demand for manure leaves in the South Salem division, some coupes in the reserves of the Perambalur and Namakkal ranges were opened in addition to those in the reserves in the Musiri range. The District Forest Officer of South Salem—Mohammed Abdul Hafiz Sahib—has been paying special attention to the prevention of theft of manure leaves by meeting the demand from recognized coupes. The result has been a marked improvement in the revenue without, it is hoped, any increase in the quantity of manure leaf actually removed from the forest. Final orders on the supply of manure leaves were received during the year in Chief Conservator's Proceedings No. 40, dated 22nd September 1922.

3. Timber and Sandalwood Transit Rules.

42. There are no *timber transit rules* in force in this circle.

Sandalwood transit rules.—The question of the revision of the *Sandalwood transit rules* in Chittoor, North Arcot district, is under correspondence. An amendment to the rules in the South Arcot district was issued in the matter of the checking station at Tirukkoyilur and the abolition of the tanna at Panruti.

4. Jungle Tribes.

43. Malayali hill village system is in force on the Chitteries in the East Salem division and the Javadis in the South and West Vellore divisions. The system is reported to have worked well except in the case of some of the villages of Tiruppattur range where the villagers stubbornly decline to come under the system.

The co-operative society opened at Komattiyeri for the benefit of the Malayalis continued to work satisfactorily during the year.

Out of two schools opened by the Taluk Board at Komattiyeri and Koilur, the latter school was closed as it did not work properly, while the former has been working satisfactorily. It has been proposed to open another school at Veerappanur. The department has given all the help needed both to the Co-operative Department and to the Taluk Board to make these institutions a success.

5. Mining and Quarrying.

44. Captain Dickens, a planter of Yercaud, applied for a prospecting licence for emery in the Sanniyasimalai reserved forest during the year and the same was since sanctioned in B.P. L.R. & Sett. No. 2617, Routine, dated 29th June 1923. The Board has sanctioned the grant in favour of Mon-Gaudart & Co. of Pondicherry of a mining lease for iron ores over an area of 4,369 acres in the Kanjamalai reserved forest, Central Salem division, for thirty years.

6. Civil Suits.

45. The second appeal preferred to the High Court regarding the ownership of the Arana and Thirthagiri blocks, East Salem division, referred to in the last report, is still pending.

7. Control of Unreserved Lands by the Forest Department.

46. The Land Revenue administration of the Javadi hill villages in the Tiruppattur taluk, North Arcot district, continues to be under the District Forest Officer, West Vellore, and a report on the working was sent in by the District Forest Officer. Government in G.O. Press No. 638, dated 7th May 1923, have ordered the continuance of the present arrangement on a temporary basis for another year.

The unreserves of the Pachamalais and Kollimalais of South Salem division continued to remain under the partial control of the Forest Department.

A. WIMBUSH,
Acting Conservator of Forests, Fourth Circle.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1923.

FIFTH CIRCLE

FOREST DEPARTMENT

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. ALTERATION IN AREA.

Reserved forests.—The year opened with an area of 3,363 square miles. In *Kollegal* an area of 542 acres of Cowdalli block was excluded during the year. Though this reserve was surveyed and mapped by the Survey of India party in 1898 and finally notified in 1900 with an exclusion of 542 acres, this area had not been deducted from the area of the block mapped by the Survey of India party. This discrepancy was noticed recently and the area of the district corrected accordingly. An area of 49 acres was transferred to *North Coimbatore* district from the Nilgiris. The area of 568 acres in Nellimalai reserve of *North Coimbatore* district and that of 18·34 acres in Bryant Park reserve of *Madura* district, whose disforestation was referred to in the last report, were excluded from the total areas of those districts. In *Tinnevelly* the whole of Milavittan reserve (630·19 acres) was disforested during the year. The area at the close of the year was thus 3,360 square miles. An extent of 2,957 acres of Bargur range transferred from North Coimbatore to Kollegal division and which was omitted to be shown in the last year's return, has been shown in Form 65 for the year under report. *Fifth Circle.*

Reserved land.—No change.

2. FOREST SETTLEMENT.

2. In *Tinnevelly* the settlement of the Karumandiyamman shola (0·15 square mile) was completed on payment of an additional compensation of Rs. 418 and notification under section 16 was published after the close of the year. The settlement of the remaining three blocks to be reserved on behalf of the Port Trust, Tuticorin, to raise tree growth to prevent sand drifting into the harbour, was also completed during the year and draft notification under section 16, sent up for publication.

3. DEMARCATION.

3. Three miles of new boundaries were demarcated with stone cairns and pillars in *Kollegal*, and two miles in *Madura* at a cost of Rs. 322 and 508 respectively. In *North Coimbatore* Rs. 116 was spent for the demarcation of the revised boundary of Nellimalai reserve of which a portion was disforested, of temple enclosures, and of the right of way to certain temples. No permanent demarcation was done in this division for want of funds. Four miles of the previously existing boundaries were repaired in *Kollegal* at a cost of Rs. 81, and $3\frac{1}{2}$ miles in *South Coimbatore* at a cost of Rs. 94.

4. The reclearing of the old boundaries was as usual done in all the districts by forest subordinates free of cost. The British and Travancore Surveyors fixed the disputed boundary near Agastiyarmalai in *Tinnevelly* district and the expenditure therefor was not met from forest funds.

5. The total length of the boundaries remaining to be permanently demarcated at the close of the year was 554 miles.

4. Forest Surveys.

(*a*) *By the Survey of India Party.*

Fifth Circle. 6. There was no fresh survey during the year. The map for Udamalpet range, *South Coimbatore* district, referred to last year was since published on a scale of 1½ inches and supplied.

(*b*) *By Local Surveys.*

7. The survey of coupes, forest enclosures, regeneration area and other minor works of a like nature was, as usual, done by the local forest officers and draftsmen.

8. *Reference maps.*—These are maintained and posted up to date in all the districts.

CHAPTER II.—MANAGEMENT OF FORESTS.

1. Regulation of Management.

Preparation and control of regular working-plans.

9. A working plan for an area of 45 square miles of forests in Pollachi range, *South Coimbatore* district, was prepared and sanctioned during the year.

In *Tinnevelly* a working plan, for the areas under the lapsed plans and also for some of those not covered by any plan before, was drawn up by the District Forest Officer. This has been submitted for sanction after the close of the year. In *Madura* the prescriptions of the sanctioned working plans were fairly followed and the deviations in respect of the working order of some coupes were sanctioned. The working plan arrears were partly cleared off during the year.

Kollegal.—A simple working plan for the ten fuel working series of the division, covering an area of 32 square miles including the Araipalayam fuel working circles of three square miles which is already under a sanctioned plan, was drawn up by the District Forest Officer and sent up for sanction; but this has been returned for revision. A temporary scheme with a rotation of three years for the extraction of bamboos in the division was sanctioned during the year. A three years' working scheme for the extraction of dead and spiked sandal trees in the division was also prepared and sanctioned during the year. A temporary working scheme for the supply of agricultural implements to the ryots of a few important villages in Kollegal range was drawn up by the District Forest Officer for an area extending over 45,952 acres and sanctioned during the year. The area consists of six felling series and these were formed only in localities which contain useful growth and which are near to the villages where there is demand therefor. It is said that they are worked successfully. This is an effort to meet the demand for agricultural implements on a simple and practical plan. The forests are eminently suited to meet the demands of an agricultural community such as exists in the division where there is no commercial demand for forest produce.

North Coimbatore.—A temporary scheme for the extraction of dead jal timber over an area of 813 acres in Talamalai range was prepared and sanctioned during the year. The extraction of spiked sandal trees was continued under the provisional scheme sanctioned for three years from 1921–22. The provisions of the sanctioned working plans and schemes were followed as far as practicable. The improvement fellings in Jaccanare timber working circle under the sanctioned working plan were not carried out as funds were not available. It was decided that the improvement working should be abolished owing to the dearth of timber species and that part of the area should be worked as a fuel working circle under the 'coppice with standard' system. The District Forest Officer's proposal to give on contract the work of improvement fellings in the timber working circles of Kallar and Jaccanare reserves was approved as an experimental measure for one year, i.e., for 1923–24. Coupes incompletely felled during the previous year were continued and completed during the year. To meet the demand of villagers for agricultural implements and small timber a temporary scheme covering an area of 6,299 acres, divided into three felling series in Talamalai range was prepared and sanctioned tentatively for three years during the year. Another scheme for 400 acres in Satyamangalam range for the

same purpose was sanctioned for a year as a temporary measure. This is a similar scheme as mentioned above for Kollegal. The large area of hill slopes above the fuel felling series is utilized for the purpose. *Fifth Circle*

In *South Coimbatore* the work continued under the Mount Stuart working plan and 152,129 cubic feet of timber were felled during the year. Coupe XVI of the Punachi Timber Working Circle was worked departmentally and there was an outturn of 24,087 cubic feet. The fuel coupes of the Udamalpet range were worked under a temporary scheme. A coupe of about 25 acres was opened as an experimental measure in each of the Pollachi and Udamalpet ranges for the removal of agricultural implements during the year. When the result of this experiment is known, the question of opening more coupes will be examined. This is on the same lines as mentioned above, and it is hoped that this scheme may prove the solution of the agricultural implement problem.

2. Communications and Buildings.

(*a*) *Roads and Bridges.*

10. 1. The details for the new works during the year are as shown below :—

(*a*) Work was continued on the Mount Stuart Ghat road to the extent of Rs. 44,241-7-0.

(*b*) The continuation of the above road was investigated and an estimate sent up for approval—3 miles 6 furlongs.

(*c*) Other new road work in *South Coimbatore* for opening up coupes—one mile 6 furlongs.

(*d*) Four miles of road and two miles of bridle paths were made in the *Madura* district.

(*e*) In *Tinnevelly* district 5 furlongs of new road was constructed and one mile of alignment was undertaken and 28½ miles of inspection paths in the Shola forests were made with reference to the Development scheme.

The total cost was Rs. 52,798.

Kollegal.—A girder bridge was constructed in the Gundal valley road. Forty-seven miles and 1 furlong of roads were repaired. The cost of new works was Rs. 204 and on repairs Rs. 500.

North Coimbatore.—No new works. The length of the road repaired was eighty-eight miles, the total cost being Rs. 2,344.

South Coimbatore.—The expenditure on the Mount Stuart Ghat road during the year was only Rs. 44,241-7-0. More could not be spent owing to an inefficient contractor. The investigation work for the branch road was completed during the year by the Forest Engineer and the plans and estimates were sent up for sanction.

The new works done by the District Forest Officer in the division were (1) the extension to Aliar road (1 mile 5 furlongs) and (2) cutting a cart-track of one furlong. The roads in Sethumadai compound were metalled. The total cost of new works was Rs. 4,449. A sum of Rs. 9,174 was spent for repairing twenty-one miles of roads.

The bullock tramway continued to work till the end of the year, the quantity of timber trammed being 134,581 cubic feet or 18,372 ½ ton miles against 13613 ½½ ton miles in the previous year. The average lead was a little over three miles. Tramway is the only means of extraction between the worked coupes and the beginning of the carting road; and there is no means of comparison of the cost of extraction.

Madura.—The new works undertaken are the construction of Vannathiparai-Guruvanuthu road (two miles) and Rajadani-Uthappanaickanur road (two miles) and also the extension of Oddanchatram-Vadagarai bridle path (two miles), at a total cost of Rs. 1,537. These works have been completed.

The bridle path from Palamalai to connect with the Ghat road in Kodaikānal range, referred to in the last year's report, was completed by the missionaries at a cost of Rs. 1,161, its length being 5½ miles. The bridle path is said to be a useful

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addition and facilitates inspection. Roads and bridle paths to a length of 137 miles 6 furlongs were maintained during the year from funds contributed by the Local Fund Department.

Tinnevelly.—The details for the new works are (1) the extension of Vallam road in Kuttalam Working Circle (3 furlongs), (2) a new road to tap coupe IV of Kalakad Working Circle (2 furlongs 30 yards) and (3) alignment of a cart-track (one mile) in Ayyanarkoil Working Circle.

A dam and fifteen culverts also were constructed. The total cost for the new works was Rs. 1,027. Seven and half miles of old road were repaired at a cost of Rs. 1,748 In connection with the Development scheme for Shola forests in the Tinnevelly district, the Temporary Extra Assistant Conservator made 28½ miles of new inspection path and 19½ miles of path made previously were recleared, at a total cost of Rs. 701. A sum of Rs. 85 was spent by him on repairs to the road to Kannikatti and beyond Kodamadi.

(*b*) *Buildings.*

11. The total expenditure on new works during the year was Rs. 15,137, and on repairs Rs. 6,419.

The important new works carried out were—In *Kollegal* the completion of the construction of rest-house and out-houses at Cowdalli; in *South Coimbatore* completion of coolie lines at Mount Stuart; in *Tinnevelly* the completion by the Temporary Extra Assistant Conservator of the two inspection sheds beyond Kannikatti and Kodamadi, the rest-house at Kannikatti and eight temporary sheds for Rangers and coolies and also the commencement of the construction of an out-house for Kannikatti rest-house.

(*c*) *Miscellaneous.*

12. The expenditure on new works was Rs. 1,886 the important works being the completion of four wells in Kollegal, sinking one well in *North Coimbatore*, and part construction of a well in *Madura*. These are all for improving the water-supply in forests for cattle and graziers who look after penned cattle. The amount of work was limited by the scarcity of funds. A scheme of the Karianshola water-supply for Mount Stuart by laying pipe lines was prepared and sanctioned by Government during the year.

13. *Telephone.*—A proposal to dismantle the branch line from Sethumadai to Tekkadi and to relay it between the Range office at Anaimalai and the sale depot at Pollachi and for connecting the District Forest office and the District Forest officer's bungalow at Coimbatore with the Pollachi depot was submitted during the year and is awaiting Government sanction.

3. Protection of Forests.

(*a*) *General Protection.*

14. There were 5,085 new cases reported during the year, both from reserved forests and unreserved lands, against 4,718 in the previous year. There was increase in all the districts except *South Coimbatore* and the increase was due, it is said, to the larger number of fires being properly reported and also to better patrol work and supervision. Of the 5,085 cases, only 4,557 were detected; these 5 together with the 1,516 cases pending at the commencement of the year, i.e., 6,073, cases, were dealt with during the year. The number of cases taken to court was 2,032 and that compounded 4,041. Total number disposed of during the year was 4,447, leaving a balance of 1,626 cases at the close of the year.

Of the 2,032 cases taken to court, 1,122 were convicted, 127 acquitted and 783 remained pending disposal by the court. The percentage of acquittal rose from six in the previous year to ten during the year. The increase was mainly in Madura due to the disposal of the long pending cases of the previous years where, the subordinates who first detected the cases being now out of service, the cases failed.

15. The number of cases compounded for which compounding fees were collected during the year are given below :— *Fifth Circle.*

District.	Number of cases compounded.		Amount of compounding fees.		Grand total.	
	Reserved forests.	Unreserved forests.	Reserved forests.	Unreserved forests.	Number.	Amount.
			Rs.	Rs.		Rs.
Kollegal	321	35	5,365	503	356	5,868
North Coimbatore	525	106	5,954	3,304	631	9,258
South do.	211	85	1,968	1,100	296	3,068
Madura	815	259	8,524	3,202	1,074	11,726
Tinnevelly	557	230	4,874	3,136	787	8,010
Total ..	2,429	715	26,685	11,245	3,144	37,930

16. The special patrol party in *Madura* continued to work throughout the year and did good work in Cumbum range and this had much good effect on the protection of the forests and the collection of grazing revenue, both of which improved considerably. There was a marked decline in the number of timber theft cases. Occasionally the party was put to plantation work and to the execution of warrants in cases of evasion and in both these it did much useful work. Forty-seven cases were detected by the party and these were compounded for Rs. 1,285.

In *Tinnevelly*, a patrol party was sent out only once and though no big cases were detected the moral effect was great and the defects in several beats were brought out. No party could be sent out afterwards as there was difficulty in granting travelling allowance for the members of the party.

(*b*) *Protection from fire.*

17. *Special protection.*—In *Kollegal* early burning of about 10 square miles of grassy areas around the sholas in Doddasampagai was done free of cost by subordinates; and the grassy areas round the Ponnachi shola of 190 acres was done at a cost of Rs. 15. The operation was a complete success and the sholas escaped fire. In *North Coimbatore* the early burning system continued and 86½ square miles were early burnt at a cost of Rs. 468. The result was satisfactory in minimising the chances of subsequent fires.

18. The area attempted to be specially protected during the last calendar year was 242,360 acres against 277,170 acres in the previous year, the total cost of protection being Rs. 10,383 and Rs. 22,296 respectively. The decrease in the area was in *Kollegal* due to the fact that only 5 of the youngest coupes in fuel felling series were kept under special protection and in *North Coimbatore* due to the fact that for want of funds the fuel working circles were not specially protected against fire during the year. The area burnt during the year under special protection was 13,498 acres against 15,625 acres in the previous year, the percentage of successful protection being 94·4 against 94·3 in the previous year.

The fire protection of the pine plantation was attempted on the same line as in the previous year and the result was satisfactory. The scheme sanctioned in 1915 for the protection of sholas in the Ampthill Downs reserve having proved unsuccessful, another scheme was submitted during the year for sanction and orders are awaited.

19. *General protection.*—The area under this head was 1,833,373 acres against 1,785,409 acres in the previous year, the increase in the area being in *Kollegal* and *North Coimbatore* due to the corresponding decrease in the area under special protection. The area burnt was 112,672 acres against 32,700 acres during the previous year the percentage of successful protection being 93·8 against 98·2 in the previous year. The reason for the low percentage was due to a greater number of fires in *Kollegal* and *North Coimbatore* during the year.

20. The total number of fires that occurred during the year from various causes both in the areas under special and general fire protections, was 503 and the aggregate area burnt was 126,170 against 315 and 48,325 acres respectively during the previous year.

(*c*) *Protection against cattle.*

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21. An area of 2,271 square miles, i.e., 67·5 per cent of the total area of reserved forests was open to grazing of all animals except goats and an additional small area of 426 square miles, i e, 12·6 of the whole area was open to all animals except browsers (i.e., sheep and goats).

22. *Incidence of grazing.*—In *Kollegal* the incidence was 7·40 acres per cow unit against 8·66 during the previous year. The incidence is naturally more than what it appears, for in most of the remote areas by the sides of the Cauvery and Palar rivers and in the interior of Doddasampagai reserve many thousands of acres of steep and rocky slopes are not grazed over. In *South Coimbatore* the incidence was 15·88 per cow unit when calculated from the area left open to grazing; but this includes much of the shola forests and grass hills of the upper Anaimalais where cattle are seldom or never taken for grazing. In *Madura* the incidence was 10 acres per cow unit and in *Tinnevelly* 2·1 acres.

23. The total number of cattle impounded was 19,769 against 17,131 in the previous year, the average for the 3 years ending 1921–22 being 14,622. The increase in the number of cattle impounded during the year was in *North Coimbatore* due to there having been generally greater number of cattle in the cases than in the previous years and in *Madura* due to better patrol and supervision.

(*d*) *Protection against injuries due to natural causes.*

24. *Spike disease of sandal.*—'Spike' continues in *Kollegal* and *North Coimbatore*. To check the spread of this disease the uprootal of all dead and dying 'spiked' trees that give scented wood was carried out on a three years' rotation. In future all spiked trees will be uprooted and burnt even if they can yield no scented wood now that it has been proved that spike can be spread by contact, and it is hoped that this will have some effect in stopping the spread of the disease which is most disastrous at present.

25. *Weeds and climbers.*—In *Tinnevelly* weeding and climber cutting was done in the teak plantations of Kannikatti and Kodamadi ranges (93 acres) at a cost of Rs. 513 and in the regeneration area of those 2 ranges (40 acres) at a cost of Rs. 273. Cutting of creepers on important species was also done in all the ranges by the beat subordinates free of cost. In *Kollegal* creeper cutting was done in sandalwood and fuel working circles over an area of 13,620 acres at a cost of Rs. 416.

26. *Prickly-pear, lantana and strobilanthes.*—Nothing was done for want of funds to eradicate the prickly-pear and lantana in *Kollegal* and *Madura*. Prickly-pear is said to be rare in *Tinnevelly*. The loranthus is reported to be a serious pest to the *Accacia melanoxylon* trees in the Kodaikanal range of *Madura* district. In *Tinnevelly* the right to remove dead and green strobilanthes in two of the ranges was leased out so as to open cover and enable the seeds of the more valuable species to germinate.

27. *Damage by animals.*—In *Kollegal* elephants do considerable damage to teak and other valuable growth. A ryot in Ramapuram range lost his life while attempting to scare away a rogue elephant which was damaging his crop. Large numbers of wild elephants now roam over the eastern portion of the *Kollegal* hills where they were only rarely seen a few years ago. In *Madura* also considerable damage was done by elephants to the teak plants in Vannathiparai plantation. The proposal to start elephant capturing operations in conjunction with the Forest department of Travancore had to be dropped as the latter have not sufficient kumakies and the extension of the teak plantation has been abandoned. When tractors replace elephant haulage it may be possible to undertake the capture of wild elephants in several localities where it is desirable that such operations should be undertaken but at present we cannot. In *Tinnevelly* the restriction about shooting sambur hinds and immature males was removed during the year under report also, with a view to reduce the damage done by sambur to teak coppice shoots, but no hinds were shot during the year. As sambur were damaging the teak seedlings in the Kodamady and Kariar plantations, the local shikaris were given permission to shoot in the plantation but

none could be shot. In Srivilliputtur range the elephants continued to do damage to the sandalwood and other saplings in Alagarkoil valley and to the crops in patta lands at the foot of the hills. *Fifth Circle.*

28. *Damage by forest and draught.*—Most of the accacia decurrens and dealbata seedlings in the fire belt sowings round the pine plantation at Kodaikanal were either killed or scorched by the heavy and severe frost of November and December 1922.

29. *Damage by rain and floods.*—Considerable damage was done by floods to the Velancombai teak plantation of 1922–23 in Palni range and plants were washed away. The floods are said to have been the heaviest on record during the last thirty years.

CHAPTER III.—SYLVICULTURE.

(*a*) *Natural Reproduction.*

30. *South Coimbatore.*—Natural reproduction is poor in the good timber forests as seedlings cannot compete against the weeds but this does not matter now that the clear felling method of regeneration has been adopted. Coppice reproduction is fair in the Anaimalai outer slopes coupes and very good in small portions on hill sides where the soil is good. Where the soil is suitable Anogeissus regenerates itself well.

North Coimbatore.—Sandal is spreading through the lower slopes of the Bargur hills and elsewhere but spike causes great havoc. Steps are being taken to eradicate all spiked trees large and small as fast as possible and it is hoped that this will gradually have a beneficial effect in stopping the disease. Nature gives a certain amount of regeneration every year but the soil and climate of this district except in the Minchiguli valley are against the production of commercial timber excepting sandal.

Kollegal.—Sandal is spreading but the spike is present which is forcing us to live on our capital but all spike trees large and small are being eradicated as quickly as possible. Other regeneration is sufficient for this purely agricultural country which has a much forest suitable for providing all the daily needs of the villagers.

Madura.—Natural reproduction is fair; one cannot expect very much in this climate. Coppice reproduction is good. Sandal is doing well in the Unjalachi reserve and in the Sirumalais and this species will doubtless spread.

Tinnevelly.—Natural regeneration both by seeds and coppice shoots is generally fair but is much interfered with in parts by strobilanthes and rank grass. Sandal is spreading in the Alagarkoil valley and at Mundanthorai and in due course will yield a regular revenue.

(*b*) *Artificial Reproduction.*

31. *South Coimbatore.*—The system of clear felling and burning the refuse after the saleable timber has been removed and sowing is now well established at Mount Stuart and is proving a most successful method of establishing a very valuable forest in place of the mixed forest so much invaded by useless bamboo and lantana. As teak and rosewood are the species that really pay well all over the working circle the whole area cleared is first sown with teak, except where there are patches too moist for teak, and in these if they are not too moist Terminalia tomentosa is sown, as this species produces a certain proportion of trees which yield figured wood much valued in the London market. In still damper spots Lagerstromia flos regina is sown. Rosewood which is mainly used as a furniture wood and is consequently not required in such large quantities as teak, and which grows very slowly to commence with will be obtained by tending the seedlings which come up naturally on the regeneration area and by undersowing the teak crop. As the latter will be frequently thinned there should be sufficient light for the rosewood to develop. The 1919 teak crop has been so undersown. Another experiment in undersowing will be undertaken in 1923–24, viz., a trial of undersowing with sandal. A teak crop in this locality with rosewood and sandal introduced as an undercrop should be exceedingly valuable. During 1922–23 an area of 133 acres has been successfully established. Sowing of teak was done three feet by three feet in order to be sure of getting a crop

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of six feet by six feet. This has proved to be so successful that the 250 acres cleared for 1923–24 has been sown 4½ feet by 4¼ feet thus effecting a slight saving in expenditure. The first thinning according to the working plan takes place in the sixth year and during the year the experimental plot of 5½ acres sown in 1916 and on which the present system of regeneration is based was thinned. It was not expected that we should get any profit out of this early thinning and it is a pleasant surprise to find that the growth has been so good that the poles taken out in the thinning and sold at Pollachi depot have yielded a good profit thus helping at this early stage to wipe out the original cost of the creation of the woods. As stated 250 acres have been cleared during the year and since sown and it is hoped that this will be the normal area regenerated in future.

An area of three acres was similarly dealt with for teak in Punachi range and the result is most satisfactory and ten acres were cleared and burnt for being sown in April 1923.

Tinnevelly.—At Kariar and Kodamady 29 and 32 acres were added to the local teak plantations. The growth on these plots is sold to contractors who clear the land and burn the refuse. The resultant crops are satisfactory.

During the year the experimental works on shola regeneration were continued. one hundred and six acres being taken in hand in the Kodamady range and 85 in the Kannikatti range. The initial operation consists in cutting the useless species up to a girth of 18 inches so as to let in light, dibbling in all the seeds of the desirable species that can be obtained and planting Hopea grown in nursery beds followed by weeding and further letting in of light in succeeding years.

In the Kodamady area 7,084 Hopea seedlings were planted out of which 60 per cent have survived, and 100,000 were raised in nurseries of which 80 per cent survive. These will be planted out during the next north-east monsoon. Shola seedlings grow slowly at first but the lines of Balanocarpus seedlings which have resulted from last year's sowings are specially noticeable running right through the regeneration area. Amongst the other species seeds of Mesua, Dichopsis, Hardwickia pinnata, Gluta and Pygeum were dibbled.

At Kannikatti 10,000 Hopea seedlings are ready to be put out in the monsoon while seeds of Mesua, Gluta and Dichopsis were dibbled. The germination of the Mesua seeds was a failure and enquiries will be made of the Research Officer as to how such seeds should be dealt with. Some of the regeneration patches at Kannikatti are specially instructive and show that with time we can get areas fully stocked with the valuable species but we have yet to test what remains of such growth after the large trees with their immense crowns have been felled; in the meantime the Macaranga system is being tested. In this district also steps to extend sandalwood are being taken. At Mundanthorai there are now number of young sandal which have arisen from seeds of a few trees put in some years ago. They have all been tended and set free from creepers and interfering weeds.

Madura district.—Six acres of teak plantation were added to the plantation at Vannathiparai and the casualties of the previous year replaced. This plantation work was proposed by a previous Conservator. There is an old plantation of 2½ acres which has produced in 40 years some very good trees, but it is near to water and it was undoubtedly started by the help of watering and, although there are two or three thousand acres of soil suitable for growing teak, the rainfall is so small (33 inches) and so precarious that, after giving the scheme a thorough trial, it has had to be abandoned. Similarly, the Velancombai plantation extension has had to be given up. Five and a half acres were added to it during the year, but for teak plantations one must have an assured and sufficient rainfall and these do not obtain at these plantations.

The attempt to establish a cheaply dense fire-proof belt of *Accacia decurrens* round the pine plantations at Kodaikanal had also to be given up as the local rainfall was too unreliable to enable it to be carried out.

Kollegal.—The only artificial regeneration attempted was for the gradual extension of sandal where it does not exist at present by means of plots of fenced nursery beds one chain square near water. The beds are sown with sandal and the resultant seedlings watered by the local Forest guard who has to get established

some seedlings in one such plot each year. The first year's work resulted in 4,500 seedlings being established in thirty beats. These plots will form oases of seed bearing sandal, the seeds of which will in due course be spread by birds. *Fifth Circle.*

North Coimbatore.—Similar operations to those mentioned above in Kollegal were undertaken in this district. The experiment with sowing teak, vengai, rosewood, *Terminalia tomentosa* in the Minchiguli valley is being watched. The elevation is probably too high for teak, but the other species can yield fine timber trees if only the young plants could be got above the dense grass without inordinate expense.

(*c*) *Operations for the improvement of the growing stock.*

32. *South Coimbatore.*—Rupees 615 were spent in pulling up lantana and liberating coppice shoots and weeding seedlings in the fuel coupes of Pollachi range.

North Coimbatore.—Rupees 50 were spent in freeing sandal from creepers over 200 acres of Coupe II Palamalai reserve and elsewhere and a good deal of similar work on valuable species was done by subordinates.

Kollegal.—Creeper cutting to free sandal trees was carried out by subordinates.

Madura.—Similar work was done by subordinates for useful species.

CHAPTER IV.—SYSTEM OF MANAGEMENT.

(*a*) *Major produce.*

33. The area under working plans, including temporary schemes, during the year was 924 square miles and the various sylvicultural systems in force are detailed below :—

	Area in square miles.	Percentage to the total area under working plan.
Selection method—		
(*a*) As per sanctioned working plan	28	3·03
(*b*) As per temporary schemes sanctioned for removal of agricultural implements.	82	8·87
(*c*) As per a temporary scheme sanctioned for the extraction of dead jal timber.	1	0·11
(*d*) Simple coppice	411	44·48
(*e*) Coppice with standards	125	13·53
(*f*) Extraction of spiked sandalwood	277	29·98
Total ...	924	100·00

34. (*a*) Comprises the area under the Mount Stuart and Punachi felling series under sanctioned working plans and being regularly worked.

(*b*) These are areas mentioned in Chapter II, paragraph 9, under special schemes for the supply of agricultural implements.

(*c*) A small local scheme for the extraction of dead jal timber in *North Coimbatore.*

(*f*) These are areas being dealt with on an approved three years' scheme for the extraction of spiked sandal trees.

(*b*) *Minor forest produce.*

35. Bamboos continued to be removed under the unregulated permit system in two of the ranges in *Kollegal* district, while in the remaining range four coupes of 7,553 acres were sold standing to contractors. Two new felling series were formed and sanctioned during the year. In the other districts the bamboo coupes were as usual leased out to contractors.

36. The right to collect all other minor produce in all the districts, except honey and wax collected departmentally in *Kollegal*, was as usual sold to contractors.

37. The free removal of grass from the reserves in *Kollegal* was authorized by the Board of Revenue in 1918 subject to the condition that in the case of the occurrence

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of fire the removals should be permitted on payment of double fees. As this concession had not the desired effect, it was decided during the year, with the approval of the Chief Conservator, to permit removal of grass at three pies per head load from all the reserves irrespective of the fact whether fires occurred or not, and a sum of Rs. 114–5–0 was thus realized during the year. One thousand one hundred and twenty-six tons of fodder grass were removed on permits in *North Coimbatore*. Stones, thorns and earth were removed on permits in *Madura* to a limited extent. The right to cut and remove dead and green strobilanthes from the reserves in two of the ranges in *Tinnevelly* district was leased out during the year under report for Rs. 3,792.

38. Grazing was as usual controlled by permits, and the number of animals permitted to graze in the reserved forests was 264,271, the fee realized being Rs. 1,31,607.

2. Agency of Exploitation.

(i) *By departmental agency.*

39. *Major produce.*—The extraction of timber and sandalwood was as usual by departmental felling. Collection of dead and wind-fallen sandalwood in *Tinnevelly*, dead and wind-fallen trees in *Madura* and drag poles in *North Coimbatore* was also done departmentally.

40. *Minor produce.*—Collection of honey and wax was undertaken departmentally in *Kollegal*, as also the seeds required for sowing.

(ii) *By purchasers.*

41. *Major produce.*—The fuel coupes in all the districts were as usual sold standing to contractors. The collection and removal of spokes and felloes in *South Coimbatore* was done by contractors.

42. *Minor produce.*—Four bamboo coupes in *Kollegal*, 14 in *North Coimbatore*, eight in *South Coimbatore* and nine in *Madura* and also the right to collect other minor produce in all the districts were leased out to contractors.

(iii) *By right and privilege holders and free grantees.*

43. The subjoined statement shows the quantity and estimated value of the different kinds of produce removed by right and privilege holders and free grantees during the year under report :–

——	Timber in thousands of cubic feet.	Value.	Fuel in thousands of cubic feet.	Value.	Bamboos in value.	Grazing value.	Other minor produce.	Total.
		Rs.		Rs.		Rs.	Rs.	Rs.
Right and privilege holders.	..	..	..	..	..	1,341	1,070	2,411
Free grantees	11	2,577	1	275	226	..	..	3,078

44. *By right and privilege holders.*—In *Madura* the right to graze free in the Ampthill Downs reserve and the concession to quarry stone and road materials free of charge from the reserved forests and unreserved lands to the departments of Government and local bodies were continued during the year. In *Tinnevelly* the removal of date and palmyrahs to the value of Rs. 1,070 was allowed.

45. *By free grantees.*—For the reconstruction of houses destroyed by fire the following free grants have been made from the unreserves by the Revenue authorities : *Kollegal*, Rs. 51 worth of timber ; *North Coimbatore*, timber to the value of Rs. 1,583 and bamboos for Rs. 194 ; *Madura*, timber and fuel worth Rs. 241 and bamboos for Rs. 9. In *Tinnevelly* a free grant of 450 bamboos and 90 casuarina posts was made from the reserved forest besides the other grants from the unreserves by Revenue authorities.

3. Outturn and sources of Forest Produce.

46. A statement showing the total outturn of major produce and the total value of minor produce from all classes of forests by all agencies during the year under report as compared with the similar details for the year previous to it, is given below :— *Fifth Circle.*

Outturn and sources of Forest Produce.

Agency of exploitation.	Timber and sandalwood in thousands of cubic feet.		Fuel in thousands of cubic feet.		Bamboos in value.		Minor produce including grazing in value.	
	1921-22.	1922-23.	1921-22.	1922-23.	1921-22.	1922-23.	1921-22.	1922-23.
					Rs.	Rs.	Rs.	Rs.
By Government agency ..	169	207	6	3	641	65	535	2,230
By purchasers	594	890	2,612	2,487	37,343	41,810	2,08,826	2,33,962
By right and privilege holders.	..	..	..	..	..	..	2,361	2,411
By free grantees	12	11	3	1	..	226	161	..
Total ..	775	1,108	2,621	2,491	37,984	42,101	2,11,883	2,38,603

47. *By Government agency.*—The increase under timber was in *South Coimbatore* due to the felling over a larger extent of regeneration area and in *Kollegal* and *North Coimbatore* to the extraction of a larger quantity of sandalwood during the year. The systematic collection of dead and wind-fallen trees in *Madura* also contributed to the increase. The decrease under *fuel* was in *Madura* and *Tinnevelly*, but the reason for it has not been explained. Under *bamboos* the decrease was in *Kollegal* and *North Coimbatore* due to the postponement of the construction of new buildings and of repairs to the existing buildings. The increase under *minor produce* was in *South Coimbatore* due to the realization of a larger amount from the sale of elephant tusks.

48. *By purchasers.*—The increase was due to the realization of a larger amount by the Revenue authorities in *Kollegal* and *Tinnevelly* and also to the sale of 8,574 cubic feet of timber in *North Coimbatore.* The decrease under *fuel* was mainly in *South Coimbatore* due to most of the contractors having failed to effect removals completely before the end of the year. There was decrease also in *Kollegal* due probably to the faulty figures of the coupe contractors and in *Madura* due to the non or part working of some of the coupes sold owing to want of labour and demand. The increase under *bamboos* was in *Kollegal* and *North Coimbatore* due to better prices realized at the sale and also to a larger demand for bamboos on permit.

The increase under *minor produce* was due to better prices obtained at the auction sale in *North* and *South Coimbatore* and *Tinnevelly* and also to collection of more grazing revenue in *Kollegal, Madura* and *Tinnevelly.*

49. The difference in figures under *right and privilege holders and free grantees* is only small and therefore calls for no remarks.

CHAPTER V.—FINANCIAL RESULTS.

50. The revenue and expenditure for the year are compared below with those of 1921-22 :—

	1921-22.	1922-23.
	Rs.	Rs.
Revenue	11,82,230	12,43,732
Deduct—Refunds	— 2,460	— 3,425
Net ...	11,79,770	12,40,307
Expenditure.		
Conservancy and works	3,47,029	3,34,194
Establishments	4,36,422	4,34,411
	7,83,451	7,68,605
Surplus ...	3,96,319	4,71,702

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51. Sixty-eight per cent of the revenue was derived from major produce, 11·4 per cent from minor produce, 10·6 per cent from grazing and 10 per cent from miscellaneous sources. Twenty-nine per cent of the expenditure was incurred on exploitation, 26 per cent on upkeep and improvement of forests and 45 per cent on miscellaneous items.

52. The increase under revenue was due to (i) extraction and sale of a larger quantity of timber in *South Coimbatore* and sandalwood in *Kollegal*, (ii) collection of more grazing revenue in all districts except *North Coimbatore* and (iii) realization of larger amounts from sale of fuel coupes and removals of produce from unreserved lands in *Tinnevelly* district. The revenue outstanding at the end of the year was Rs. 1,41,095 of which Rs. 25,922 actually fell due within the year. The estimated value of the produce at sale depots was Rs. 67,796 against Rs. 82,369 in the previous year.

Expenditure.

53. *Conservancy and works.*—Rupees 12,835 owing to less expenditure incurred on buildings, demarcations and fire protection and other works for want of funds.

54. *Establishments.*—Rupees 2,011.—The difference is chiefly under travelling allowances due to restricted touring during the year.

CHAPTER VI.—RESEARCH AND EXPERIMENTS.

55. The chief item of research going on in the circle is the operation which is being conducted in the *Tinnevelly* shola forests on a considerable scale to find out the proper method of regenerating such forests. The experiments are now in their third year and are proceeding regularly. They have already been mentioned under artificial regeneration. Shola trees grow slowly at first until they have established a good root system, but the work done shows that with sustained effort there should be no difficulty in regenerating the forest with the best species. What we do not know at present is the extent of the damage that the felling of the overwood will cause. If it should be excessive we have the Macaranga system to fall back on.

Concurrently with the above experiments the examination of the forests has continued which has only been rendered possible by the continuation of the construction of a net work of paths and inspection sheds and lines. The different classes of forest have now been marked on the Survey of India maps including the reed forests which are estimated to yield 7,000 tons of paper per annum. It is hoped that the Paper Expert from Dehra Dun will be able to visit the forests in the coming year. Arrangements have been made to start systematic stock valuation during 1923–24 which will show us what quantities of the different sorts of timber are available and how much fuel. When we know this and the forest engineering branch and the exploitation branch tell us at what cost this timber can be extracted from various parts of the forest, we shall be in a position to see what industries can be started to deal with the constant supply of timber of various sorts available. It will take time before work can be commenced, but the necessary preliminary work is being done.

Mention has already been made of the experiments with an underwood to teak in the Mount Stuart forests in *South Coimbatore* district.

Some success has been obtained in *North Coimbatore* and *Kollegal* in extending sholas by artificial regeneration, and early burning of grassy forests in *North Coimbatore* and *Kollegal* has been effective in preventing much of the damage normally caused by fire and in preventing fires reaching sholas. Mention has been made of the experiments to establish sandal in places where it is not found at present.

Experiments have been made round Mundanthorai in *Tinnevelly* to see how *Strobilanthes* should be dealt with. The forest is poor but grows small-sized teak which are useful. The experiments show that the cost on any direct action is prohibitive and a trial is being made of allowing cattle-penning. The cattle will not eat teak and it is hoped that the trampling down by them of the *Strobilanthes* will enable seedlings to come up that are suppressed at present.

Experiments were made in the shola forests of this district to find out the best method of sowing *Hopea* seeds and it is found that good results are obtained by removing both the wings.

CHAPTER VII.—ADMINISTRATION.

CHANGES.

56. During the last official year there was no change in the territorial jurisdiction either of the division or ranges. *Fifth Circle.*

A list of officers who were in charge of the circle and of the several divisions therein is appended to this chapter.

57. *Health of the establishment and sanitation.*—In *South Coimbatore* and *Tinnevelly* the health of the establishment is reported to have been fairly satisfactory. In *Madura* plague was severe throughout the district especially in Madura Town and in the Cumbum Valley. There were six casualties in the district during the year of plague and malarial fever; one first grade Ranger Mr. R. Guruswami Ayyar died of pneumonia. The casualties reported in the other divisions are three foresters and two guards.

No anti-malarial measures were carried out in *South Coimbatore* during the year.

TOURS.

58. Mr. Martin, the Consulting Forest Engineer with the Government of India with the Conservator of Forests visited the shola forests of Kannikatti and Kodamady ranges in Tinnevelly district in July 1922 to gain further acquaintance with these forests which had been opened up by paths. The Chief Conservator of Forests visited the Punachi forests of South Coimbatore along with the Conservator of Forests.

The Conservator of Forests visited all the districts except *Kollegal* during the year and made inspections of forests. The total number of days spent on tour during the year was 300.

All the District Forest officers spent more than the prescribed period on tour during the year except those of *Kollegal* and *Tinnevelly* who spent 170 and 177 days respectively.

INSPECTIONS OF OFFICES.

59. *By the Conservator of Forests.*—All the District Forest offices except *Kollegal* were inspected during the year, the result being satisfactory.

By District Forest officers.—All the range offices in each of the divisions in this circle were inspected during the year by the respective District Forest officers.

AUDIT OF DISTRICT FOREST OFFICE ACCOUNTS.

60. The Assistant Inspector of Local Fund Accounts audited the accounts for 1921–22 of all District Forest offices in the circle, during the year and the results are reported to be generally satisfactory.

VERNACULAR TRAINING SCHOOL.

61. There was no session of the Vernacular Training School held during the last official year.

OFFICERS IN CHARGE OF THE CIRCLE.

Mr. H. F. A. Wood	Throughout the year.

OFFICERS IN CHARGE OF DISTRICTS.

Kollegal	M.R.Ry. J. Sadasiva Ayyar Avargal, B.A., Extra Assistant Conservator—Throughout the year.
North Coimbatore	Mr. C. DuPre. Thornton, Deputy Conservator of Forests, from 1st April 1922 to 1st November 1922. Mr. D. F. Stileman, Deputy Conservator of Forests—Throughout the remaining period.

Fifth Circle.	*South Coimbatore*	Captain W. G. Dyson, Deputy Conservator of Forests—Throughout the year.
	Madura	M.R.Ry. K. A. Chengappa Avargal, Deputy Conservator of Forests—Throughout the year.
	Tinnevelly	M.R.Ry. George Venugopaul Avargal, B.A., Deputy Conservator of Forests—Throughout the year.

CHAPTER VIII.—GENERAL.

1. Formation and Management of Panchayats.

62. No new panchayats were formed during the year under report. In *Tinnevelly* the preliminaries for the formation of panchayats for two reserved forests in Kuttalam range and for one in *Tinnevelly* range, are said to have been completed during the year and these will be handed over to panchayats before long. The four existing panchayats in the division continued to work during the year.

In *Madura* the five reserves in class V continued to be under panchayat management. It is said that the attempt made again to place the one remaining reserve in that class also under a panchayat proved unsuccessful as the villagers were not willing to take up the panchayat responsibilities. The panchayat management was not satisfactory and the state of affairs found by the District Forest Officer in the Palamalai reserve panchayat area is reported by him to be so sad that he brought it specially to the notice of the Collector and the Revenue Divisional Officer.

In *South Coimbatore* the panchayat management by the Delavoipatnam panchayat has been satisfactory, and as a result of it, recommendation has been made to Government to invest the panchayat with certain powers of a forest officer, viz., to compound forest offences arising within their jurisdiction, to accept compensation, to seize and impound cattle illegaly trespassing on the areas entrusted to the panchayat.

The District Forest Officer, *North Coimbatore*, inspected the Andiyur panchayat in the district and the management is reported to have not been satisfactory. The working of the eighteen grazing panchayats in Mettupalayam range was satisfactory.

No area was placed under panchayat management in *Kollegal* as the people are so backward that they are not fit for it. This is unfortunate for there is no district with more suitable forests for such management and there are ample areas of forest available.

2. Measures for Improving Local Supplies and Facilities.

63. *Manure-leaf supply.*—The limited demand for green leaf-manure in *Kollegal* was met as usual from private forests and unreserves. In *North Coimbatore* two coupes of twenty acres were opened in Satyamangalam range for the supply of green manure leaves. And the right of collecting *Dodonæa viscosa* in a fuel working circle was leased out during the year with a view to encourage the use of this species for manure. In *Madura* steps are, it is reported, being taken by the revenue officials to encourage the growth of leaf manure by the ryots themselves in the patta lands, so the Collector was averse to the department making special arrangements for some supply from the forests as he considered that it will be a retrograde move; so the scheme which had been drawn up was not put into force.

In *Tinnevelly* the right to remove manure leaves in Srivilliputtur range was sold for Rs. 3,435; and the issue of permits continued for the removal of this stuff from the reserves of Nanguneri range. The Collectors of Tinnevelly and Ramnad also considered that any special forest scheme for the supply of leaf manure would be a retrograde step, so at the end of the current lease in Srivilliputtur the scheme will be abandoned and nothing more will be done than allow the removals on permits at market rates.

64. *Supply of fuel and agricultural implements.*—In *Kollegal* the fuel coupes were as usual sold standing to contractors but the rates realized were low owing to the incoming of jaghir fuel into Kollegal town in large quantities. Small coupes

were in addition opened here and there to meet the needs of the villagers near by whenever it was thought that the villagers would co-operate in working them. There are ample forests eminently suited to meet the ordinary wants of the people but the latter are very backward at present. To meet the demand for fuel in such very backward villages, arrangements were made for the issue of permits for the several coupes by the neighbouring permit issuing officers on one or two fixed days in every week, the fellings being controlled by the beat subordinates. This is said to be popular with the ryots who will have to go through the permit system period before they are sufficiently advanced to appreciate the village coupe system. The wants of the villagers for agricultural implements and timber were met from the coupes specially opened for the purpose. With such large areas of suitable forest there is no reason why the urgent requirements of the ryot as regards agricultural implements should not be met in the simplest possible way consistent with the conservancy of the forest and this is what has been arranged for in the case of many villages and could be extended to more if the people would co-operate and not merely steal. *Fifth Circle.*

In *North Coimbatore* the demand for fuel, etc., was met from the coupes sold to contractors. In two of the ranges each of the fuel coupes was divided into two so as to sell one half to the villagers and the other to contractors; but the villagers did not avail themselves of the opportunity thus offered to them and so both the portion had to be sold to the contractors. This division of coupes was suggested at the meetings of the Forest Committee but this is the result. A small bamboo working circle has been opened in one of the ranges to meet the demands of the villagers for bamboo and thorns, the demands in the other ranges being met as usual from unreserves and fuel working circles. Three working circles were opened to supply the hill villagers with fuel and agricultural implements. A scheme was drawn up and sanctioned after the close of the year for the supply of agricultural implements to plain villages at fixed rates, on the same system as mentioned above for Kollegal. The District Forest Officer reports that he hopes that it will be a thorough success. Drag poles were as usual supplied to the people through the agency of a contractor.

As a result of the Forest Committee Conference held in 1921 the following concessions were granted to the villagers—

(1) The system of issuing a permit for each grazing block was abolished and one permit was declared valid for the whole range.

(2) Penning was allowed free of cost, licences being granted on application.

(3) In fuel working circles the period of closure of areas for grazing was reduced to 5 years from 10, 12 and 15 years.

In *South Coimbatore* the right to collect spokes and felloes from the top ends of felled trees was leased out. Drag poles were collected and sold in Punachi hills to the cartmen. Arrangements were also made during the year to supply the poles felled to the cartmen at the top of the ghat road. Agricultural implements coupes were opened in two of the ranges and removals from them were allowed on payment whenever there was demand on the same system as has been referred to for *Kollegal* and *North Coimbatore* districts.

In *Madura* the supply of fuel to Madura town was considerably increased by working more arrear coupes during the year, so much so there was no complaint of fuel famine and there was fall in the price also. The coupe contractors were bound as usual to supply the people with the fuel and other produce at the edge of the forests at fixed prices. The raising of the railway rates and dullness in trade have greatly affected the price of fuel coupes and this is sure to affect the future price of our coupes.

Improvement of water-supply in grazing grounds.

65. In *Kollegal* two wells were sunk for the benefit of the cattle at a cost of Rs. 827 during the year under report, but one of them remains incomplete as the water level was not reached even at a depth of 35 feet. More could not be done owing to financial stringency but allotments for this purpose are now being made annually.

Fifth Circle.

In *North Coimbatore* one well was sunk at a cost of Rs. 301 and two repaired at a cost of Rs. 270. Two tanks were deepened at a cost of Rs. 626. A list of ruined wells, ponds and tanks in grazing grounds in the district has been prepared and works will be taken up one after the other as funds permit.

In *South Coimbatore* the provision of special watering facilities in grazing grounds is not an urgent one as perennial streams flow through most of the blocks. To meet the few cases of blocks which are waterless in the hot weather orders are in force permitting cattle covered by permits for the blocks in question to pass into or through other blocks for watering purposes.

In *Madura* nothing could be done for want of funds and in *Tinnevelly* nothing was spent as no need was felt in this direction.

3. Timber Transit Rules.

66. There was no change in the rules during the year, and they are said to have been worked satisfactorily. There were cases under these rules detected in all the divisions except *Tinnevelly*.

The sandalwood transit rules in *Kollegal* and *North Coimbatore* divisions also worked well.

4. Jungle tribes.

67. In *Kollegal* the number of sholaga settlements rose from 9 to 11 during the year and the total area occupied by them was 220 acres. The area was actually surveyed during the year. The sholagas were allowed free cultivation in the areas occupied by them and they are to supply labour to the department. Though they look simple and innocent they are reported to be expert forest offenders since they wilfully set fire to forests and are systematic poachers.

An extent of 26·57 acres in the North Bargur Reserve was granted for dry cultivation on payment of an assessment of Rs. 12-13-0.

In *North Coimbatore* sholagas are being encouraged by grant of free leases of lands within the reserve for cultivation. In addition to the old leases ten new settlements to the extent of 508·31 acres were leased out during the year. The sholagas are employed in departmental operations.

No sholaga school was started during the year under report for want of funds. And the proposal to open schools in the circle for jungle tribes was dropped as the benefit to the department thereby is only very little.

The mulcers and Kadirs in *South Coimbatore* were as usual employed on forest works. They were allowed to cultivate lands free of rent in consideration of services rendered by them to the department.

In *Madura* the Palians are the only jungle tribes available and attempts to settle them proved unsuccessful.

5. Mining and quarrying.

68. Nil.

6. Live-Stock.

Elephants.

69. In *South Coimbatore* there were 26 elephants at the commencement of the year. Seven were captured during the year and three were transferred from the Nilgiri district. Of these 36 elephants five died and nine were sold, leaving a balance of 22 to the value of Rs. 84,500 at the end of the year.

The proposal to capture elephants in *North Coimbatore* was dropped for want of funds. Proposals made by the District Forest Officer, *Madura*, to start elephant capturing operations in the Cumbum Valley on account of the considerable damage caused by elephants to the teak plantations, were dropped as no suitable help could be expected from the Travancore authorities and as orders had to be issued for the abandonment of the teak plantations owing to the scarcity of rainfall.

Other animals.

70. *South Coimbatore.*—There were 34 bulls and 34 buffaloes at the commencement of the year. Eight bulls and ten buffaloes were purchased for Rs. 2,215 during the year. Four bulls and four buffaloes were sold in auction and one bull died of heart failure, thus leaving a balance of 37 bulls and 40 buffaloes at the end of the year, their book value being Rs. 6,490. *Fifth Circle.*

7. VETERINARY ESTABLISHMENT.

71. The Assistant Veterinary Inspector was in charge of live-stock in *South Coimbatore* division. Occasionally he inspected the live-stock maintained at Dhoni in Palghat division in pursuance of an order issued to do so.

The Inspector of Live-Stock inspected once during the year the live-stock in *South Coimbatore* division.

8. CIVIL SUITS.

72. In *Kollegal* a civil suit was filed in the local Munsif's court for the recovery of a sum of Rs. 108-10-0 due by an avaram bark contractor. In November last the court decreed the sum of Rs. 174-5-7 against the defendant. As he is a resident of Mysore State there has been delay in the execution of the decree. Steps are being taken to have it done as early as possible.

In *Madura* the suit filed against one Alagiriswami Chetti referred to in the last year's report, is still pending.

CONTROL OF UNRESERVED LANDS BY THE FOREST DEPARTMENT.

73. The department has no control over unreserved lands in the circle except the three sandalwood working circles in *Kollegal* district and also an area of 866·8 acres of unreserves included in the Bargur sandalwood working circle and exploited for bamboos along with the Tamarakarai bamboo working circle.

H. F. A. WOOD,
Conservator of Forests, Fifth Circle.

23*rd July* 1923.

ANNUAL ADMINISTRATION REPORT OF THE FOREST DEPARTMENT

FOR THE

YEAR ENDING 31ST MARCH 1923.

SIXTH CIRCLE

CHAPTER I.—CONSTITUTION OF STATE FORESTS.

1. Alteration in Area.

1. *Reserved forests.*—The total area of reserved forests in the circle remained practically the same as that of last year. Two reserves (the *Constantia* and *Sandal wood* reserves) with an area of 49 acres were transferred from the Nilgiris to the North Coimbatore division of the Fifth Circle. *Sixth Circle.*

2. *Reserved lands.*—The area of reserved lands decreased by one square mile chiefly due to the correction of the areas in the Nilambur division with reference to those given in the working plan.

2. Forest Settlement.

No forests were finally settled during the year. Of the 80·3 square miles pending settlement 74·7 square miles represent the area of the Mudumalai forests. This area was notified under section 4 so long ago as 1919 and it is not clear why the final settlement should be dragging on for so long.

3. Demarcation.

During the year ten miles of new boundaries were demarcated in the Wynaad. The usual reclearing of boundaries, free of cost, by the subordinates was carried out in all the divisions except the Wynaad and Nilambur. In the latter division reclearing was done during the fire protection operations.

In the Nilgiris, the general verification of reserves, which was stopped in 1918, should be resumed at the earliest possible moment. The longer it is deferred, the more expensive will the work ultimately prove to be. It is observed that the work done up to 1918 has not been properly maintained, though this maintenance has doubtless figured in annual reports as executed "free of cost, by the subordinates."

4. Forest Surveys.

In the Wynaad, the Mysore-Malabar boundary adjoining the Kurichiyat reserve from Murmavu to Rampur ford (18 miles) was verified and surveyed by the Revenue Survey Party No. VIII. The existing boundary trench was found by the party to have been wrongly cut in some places on this portion of the boundary and on that adjoining the Begur reserve and it is proposed to rectify the trenching during the current year. It is to be regretted that this was not done at the time of the survey and verification referred to. A second verification now becomes necessary.

The survey of coupes, plantations, sample plots and roads was carried out by the subordinates in North and South Mangalore, Wynaad, Nilambur and Palghat. The reference maps were maintained in all divisions.

CHAPTER II.—MANAGEMENT OF STATE FORESTS.

1. Regulation of Management.

Sixth Circle.

Preparation and control of working-plans.—No new working plans were sanctioned during the year. Mr. Bourne's working plan for the Nilambur forests was generally approved but the giving of full effect to it was deferred pending the restoration of normal conditions in Nilambur and investigations by the Chief Forest Engineer.

Schemes for working the fuel areas in the Coondapoor and Shankaranarayana ranges of North Mangalore division and bamboo areas in Vagapanai reserve in the Nilgiris were approved by the Conservator during the year.

The prescriptions of the existing working plans were, with small exceptions, worked up to.

There may be said to be only one plan (Nilambur) current in the circle, other work being conducted on preliminary schemes, improvisations on time-expired plans and go-as-you please principles. A great deal of useful information has, however, been collected where close records of the work actually done have been maintained, but the time for the systematic preparation of plans for practically the whole of the circle is overripe, and it may be hoped that the shortage of officers being gradually made good, and if no reduction of the sanctioned cadre is made, this work of prime importance may shortly be taken up.

2. Communications and Buildings.

Roads and bridges.—There was an expenditure of Rs. 20,843 on new works and Rs. 25,850 on repairs. There were no new works of importance. The amount spent (Rs. 20,843) on new works includes Rs. 4,097 paid for the acquisition of land occupied by the Dhoni-Olavakode road. Rupees 11,951 was spent on the collection of metal for the metalling of the Chedleth-Sultan's Battery road, which is more in the nature of repairs than a new work. The balance mostly represents expenditure on inspection paths in South Mangalore, Wynaad and Palghat.

The amount spent on repairs represents the maintenance of 315 miles of roads and bridle paths.

Buildings.—The expenditure on new works amounted to Rs. 37,476 and that on repairs to Rs. 9,914.

The most important works were :—

	Rs.
Nilambur division—	
The reconstruction of the Circuit house and the District Forest Officer's bungalow and the temporary reconstruction of the District Forest office, Range Officer's quarters and Range office at Nilambur	17,006
The Nilgiri division—	
The completion of the Range office at Kargudi	2,072
Palghat division—	
Part reconstruction of the Range office at Mannarghat	2,178
Chenat Nair exploitation division—	
Completion of buildings at Sappal and Olavakode	6,682

Rupees 5,184 was spent by the Nilgiri division on the construction of permanent camps for the Madras Forest College at Ootacamund and Coonoor. This is not, properly, a debit against the circle though passing through a circle officer's accounts.

The proper housing of subordinates is a matter of importance which will receive the consideration it deserves as funds permit.

Miscellaneous other works.—The only important work undertaken was in North Mangalore, at a cost of Rs. 2,353, in connexion with the removal of obstructions in the Sitanadi river to render it fit for floating timber. The total amount spent by the Public Works Department in connexion with the improvement of the Peishwani river up to the end of the last season was Rs. 31,155, out of which Rs. 14,070 was spent during the last season. The Public Works Department hope to complete the

work by the end of the next season. The District Forest Officer, South Mangalore, reports that the operations have improved the river; but there remains more to be done. *Sixth Circle.*

3. Protection of Forests.

(*a*) *General Protection.*

The total number of forest offences reported during the year under review is compared below with that of the previous year :—

Cases.	Injury to forests by fire.		Unauthorized felling.		Unauthorized grazing.		Other offences.		Total.	
	1921-22.	1922-23.	1921-22.	1922-23.	1921-22.	1922-23.	1921-22.	1922-23.	1921-22.	1922-23.
Cases taken to court ..	15	17	78	119	17	28	22	48	132	212
Cases compounded ..	24	53	855	1,140	146	288	76	129	1,101	1,610
Cases undetected ..	82	116	7	9	..	..	5	..	94	125
Total ..	121	186	940	1,268	163	316	103	177	1,327	1,947

There is thus a considerable increase observed in the number of offences during the year. The increase occurred chiefly in South Mangalore (503) and in Palghat (175). Nearly half the number of cases (total 775) in South Mangalore are reported to be from unreserved lands, the result of stringent orders issued by the Collector in regard to their protection. The increase in the reserved forests is attributed to greater activity displayed by the Range Officers, Puttur and Uppinangadi, doubtless as a result of the activity of the District Forest Officer. Grazing offences in this division increased considerably due, it is stated, to the unwillingness of the people to take out permits, until forced to do so by the institution of special patrol parties. That this energy must be maintained is evident from the reports of considerable thefts of timber from unreserves in the Kasaragod taluk; here it is hoped to effect a remedy presently, by the reservation of the areas which have not yet been completely destroyed.

The increase in Palghat is ascribed to greater vigilance on the part of the subordinates and to better supervision exercised by panchayats over the areas handed over to them. It would have been interesting to learn the number of cases reported by panchayats. There was also some increase in the Mannarghat range, stated to be due to the fact that there were no subordinates for a greater portion of the previous year owing to the Mappilla rebellion. Timber thefts here are becoming more common as the accessible portions of private forests become worked out. The subordinate staff is perfectly well aware of what goes on and better supervision is required.

The percentage of cases prosecuted was 11·2 and the percentage of convictions in prosecuted cases was 86·6. The amount of compounding fees realized was Rs. 19,440 (Rs. 14·6 per case and Rs 7 per person) against Rs. 23,848 realized in 1921-22. The amount of the fees in 1921-22 was largely inflated by the collection of a heavy compounding fee in the Nilgiris in a case of illicit removal of sandalwood.

A sum of Rs. 25 was awarded to a Revenue Inspector in South Mangalore for detecting illicit fellings. No other rewards were paid by the department during the year.

In the Nilgiris, the subordinates were rewarded to the extent of Rs. 250 from the Nilgiri Game Association and Fishery funds for the detection of shooting and fishing offences.

(*b*) *Protection from fire.*

Special protection.—The period dealt with is the calendar year 1922. During the year, early burning operations were conducted in the Uppinangadi range of South Mangalore, the major portion of the Chedleth range and two reserves of Begur range in the Wynaad, also in the Mudumalai and Sigur ranges in the Nilgiris. There were no fires in the areas so treated in Wynaad and the Nilgiris.

Sixth Circle.

About 1½ square miles were burnt in South Mangalore. This system has since been extended to the ghat forests in North Mangalore and to the Puttur range of South Mangalore. In the other parts of the circle the old system of protection continued.

The area over which protection was attempted was 1,056·5 square miles, against 881·85 square miles in the previous year, and the area successfully protected was 99·6 per cent. The cost per square mile successfully protected works out at Rs. 15, against Rs. 24 in the previous year, thus reducing the cost by about 38 per cent. Only 7,447 acres were burnt during the year as compared with 7,972 acres in the previous year.

In considering these results (which will be improved upon, on paper at all events, as the method of early burning is extended), it is necessary to bear in mind that, with so much of the most valuable part of the forest burnt over by the department early in the season, the inflammable matter is much reduced and, on the subject of early burning generally, it must be stated that this compromise between complete protection and complete abandonment will answer fairly well only for so long as the supervision remains good. If the lower subordinate is left to himself, he will burn at the least trouble to himself; that is, when the forest will burn easiest, and the damage done will be the maximum.

It is reported that some ryots are attracted by the system of early burning as providing them with early grass and saving them the trouble of burning the forest themselves; while others deprecate the practice as destroying the thatching grass which they require.

General protection.—The area under general protection was 498,692 acres of which 3,090 acres were burnt.

(*c*) *Protection against Cattle.*

The area closed to grazing slightly increased from 340 to 342 square miles (out of 1,951 square miles the total area of reserved forests and reserved lands in the Circle). The whole of the forests in the Nilambur division was closed to grazing and in Palghat 160 square miles out of 264 square miles. Over the greater part of the last-named division there is little demand for grazing. Of the total area, 65 per cent was open to all animals except goats and 13 per cent was open to all animals except browsers (goats and sheep).

The grazing incidence is stated to be—

South Mangalore	15	acres per cow unit.
Wynad	26	" "
Palghat	7·6	" "

The point has not been noted on for North Mangalore and the District Forest officer, The Nilgiris, reports that it is not possible to arrive at any incidence figure for his division as cattle frequently migrate from one block to another. All District Forest officers might well have commented on the impossibility of arriving at any conclusions regarding incidence. With grazing "blocks" containing so much on which there is no grazing (precipice, dense woods and so on) it is quite impossible to arrive at a figure. We do not know the area with grazing available on it and the incidence is very much greater than our figures can show.

The number of cattle impounded during the year was 3,709, an increase of 1,538 over the previous year. The increase occurred principally in *South Mangalore* (738) already commented on, and in *Palghat* (1209).

In *Palghat* the increase is explained to the larger number of grazing offences and to a large number of cattle impounded in the Erode panchayat areas, 458 cattle having been involved in one case alone—neither the people, nor even some of the panchayatdars, had taken out grazing permits.

(*d*) *Protection against injuries from natural causes.*

Teak defoliators.—In *Nilambur* division there was an attack by Pyrausta Macharalis in May 1922 lasting about three weeks. Crows in great numbers were observed catching the caterpillars. There was a second attack in November 1922 by Hyblœa Puera. Nothing of importance is reported from other divisions under this head.

CHAPTER III.—SYLVICULTURE.

(a) *Natural reproduction.*

The seeding of most species may be said to have been good; but though *Hopea parviflora*, the seed of which is required to an ever increasing extent, is always uncertain in particular localities, and as the vitality of the seed is of very short duration, it is often difficult to procure the seed exactly where it is required. *Sixth Circle.*

The reproduction of the more valuable species cannot be left to nature unaided and where no such assistance has been rendered, it may be said to be poor. Very often the seed, falling into dense grass or thick undergrowth, has little chance of germinating or if it does, the resultant seedling is choked and killed. In the really evergreen parts of the Chenat Nayar forest there is undoubtedly sufficient natural regeneration on the ground and it would appear that this evergreen growth will persist in spite of having been suddenly exposed to far more light than it would find under natural conditions; but the forest consists of many types and over a great part the efforts of nature must be supplemented. In *South Mangalore*, in suitable localities, natural regeneration of *Hopea* is prolific, and only awaits assistance to grow on into a very valuable crop. The example cited in the last year's report is a very striking one.

(b) *Artificial reproduction.*

Regular plantations.—In Nilambur, it was necessary to restock 165 acres of teak planted in 1921 and which, on account of the Mappilla disturbances, failed for want of tending. In replanting, or resowing such areas, it is a most difficult matter to ensure success and it is to be feared that these areas will always, from their inferior growth, mark a somewhat notorious period in the history of Malabar.

In these plantations the experiment of sowing, instead of planting, is being tried. The District Forest officer reports that the results hitherto obtained are not very encouraging and would obviously prefer to raise his crops by planting, a method which has been so successful in the past. The fact probably is that sowing, to be successful, requires far more supervision than planting, in that so much depends upon completing the burning, and getting the seed in, in good time; while the time and continuance of the rainfall are important factors. In regard to planting on the other hand, in such a place as Nilambur, it is practically always possible to commence planting where the continuance of the rainfall may be relied upon; casualties are fewer and an even crop, which is a matter of such great importance, is practically certain. Also planted seedlings grow faster and probably less weeding is later required on this account. But if the difference in cost between establishing a good enough crop by sowing, and that by planting, is appreciable the advantages of the latter method may be outweighed.

In *The Nilgiris*, about 12 acres in the Ootacamund range were planted with hardwood Eucalyptus and about 20 acres in the Coonoor range were similarly treated. Both the areas selected are on very inaccessible and infertile heights and therefore unsuited for the production of timber crops. It is proposed for the future, therefore, to confine the planting of such of these hardwoods as have been shown by the experimental plantations made in 1913, to be suited to the locality, to the old *Acacia dealbata* plantations as these are felled over.

The Nilgiri report makes no reference to the areas clear-felled and sown with teak in the Mudumalai range. The growth in these areas is very slow. An area of 170 acres was clear-felled in these forests during the year and will be planted up, after burning, in 1924. Teak stumps will be used. This form of planting is on its trial, but, from the small scale experiments hitherto undertaken, it would appear that the growth in the first year or two is much faster than that of normal seedlings; this should reduce the cost of weeding.

Blanks in the old Eucalyptus plantations are restocked at the time of cutting over the old crop.

In the Chenat Nayar forests of the *Palghat* division, the restocking of the areas exploited was undertaken. The principal species made use of were mahogany (*S. Macrophylla*), *Hopea parviflora*, and *Hardwickia pinnata*. Of the former it was

Sixth Circle.

found that in December the casualties amounted to over 40 per cent, which was considerably increased by the hot weather of 1923. In the same period the *Hopea* casualties amounted to 65 per cent and those of the *Hardwickia* to over 90 per cent. Similarly, enumerations of previous years' plantings disclose disappointing results, though it is satisfactory to note that there are a certain number of *Hopea* and *Artocarpus* seedlings surviving and these, if adequately tended, should now be established.

In the *Wynaad* division, 75 acres were dibbled with teak at an espacement of 12′ × 12′. At the end of the year 50 per cent of the seedlings were surviving. Four acres were planted with *Hopea* in the Kannoth reserve, the results are reported to be encouraging. A teak plantation of 10 acres, formed in 1921, and condemned as a failure, was burnt with excellent results.

In *South Mangalore*, coupes 1 and 11 of East Jalsur (252 acres) previously sown with *Hopea* and *Artocarpus* were weeded and tended; casualties were also replaced and the overwood was opened out. Possibly this latter operation has been done to too great an extent to commence with for a dense growth of *Strobilanthes* has come up and it will be necessary to spend money on keeping the seedlings clear of it.

One thousand acres in the Parappa reserved forest was sown and planted up with *Hopea* and *Artocarpus*, 27′ × 27′; similarly *Artocarpus* was sown over 57 acres, while in the Porkala and Padnur reserves 901 acres were planted and sown with the species named. The secret of the success of these sowings lies in the working of the soil before the seed is put down; and, although complete success is variable depending upon the nature of the forest treated—whether it be deciduous or evergreen—there can be no doubt whatsoever that most valuable crops are being raised over considerable areas and at small expense. Work of the same class was done in the *North Mangalore* division over some 600 acres with a success which is stated to be considerable.

Taungyas.—In the *Wynaad*, a small area of 3¼ acres of tuckle in Kudrakote reserve was planted with teak seedlings. A nursery for mahogany was formed for planting in the tuckle area in Adavankunnu reserve.

Cultural operations.—Sandal was sown in *North Mangalore* in 71 acres in Hosabettu and Todar reserves and the result was a failure. The operation has since been given up. In the *Wynaad*, an area of 9 acres in Kuppadi reserve was sown with sandal seeds in two patches. One patch being very near a swamp has failed, and the other is fairly successful. In the *Nilgiris*, the sowing of sandal seeds was continued at Kargudi over an area of 30 acres, the total area sown amounting to 82½ acres. The average height of the seedlings sown during the last three years is —

1920	11·6″
1921	7·5″
1922	3·4″

(c) Operations for the improvement of the growing stock.

Thinnings were carried out in the Nilambur teak plantations and since the close of the year the arrears of this work, due to the enforced neglect during the Moplah disturbances, have been made good. In the *Mangalore* divisions the opening up of areas, naturally or artificially stocked with Hopea, was proceeded with: this is a highly important work, but one requiring considerable skill. The factors of the different localities differ materially and the work cannot be done by rule of thumb: it is probable, however, that the operations should be conducted lightly and frequently, so that the weed growth is not unduly encouraged; while in areas of deciduous forest, caution is specially indicated. It is regrettable that the trees destroyed in these fellings and girdlings are for the most part unsaleable.

A thinning in a teak plantation at Parappa, *South Mangalore*, which had been under planted with Hopea in 1917, 1918 and 1919 produced a net profit of Rs. 36 per acre.

The thinning of the Hopea plantation at Pilarkhan in *North Mangalore* was continued and completed.

The ordinary tending operations were continued in all divisions.

There can be no doubt of the great value of the cultural operations being conducted in the *Mangalore* divisions and referred to in some detail above. In its proper habitat *Hopea parviflora* is a very easy crop to raise, and it is an extremely valuable one. But the very large areas now being dealt with annually will require tending, and it is becoming evident that unless much of the work being done is not to be lost, there must be some increase of establishment. *Sixth Circle.*

On sowing, planting, tending, thinnings, etc., the circle spent Rs. 40,500 during the year.

CHAPTER IV.—EXPLOITATION.

The experimental exploitation of the Chenat Nair forests under modern methods was continued. In October 1922 this work was organized as a special unit, a special officer being placed in charge in place of the District Forest Officer, Palghat, who had, up to the time noted, been required to organize this difficult work in addition to his general duties. As in the previous year the timber extracted was mainly supplied to the Kolar mines, the quantity supplied during the year being 61,480 cubic feet, or practically the same as in the previous year. This market is only anxious for certain species though it will, rather as a favour, absorb a certain amount of the others occurring in these forests. The mixed nature of the crop, and the paramount necessity for intensive exploitation render it imperative that the whole of the outturn shall be marketable. The majority of the yield is of kinds of timber hitherto unused; much of it of good enough class, but unknown because it occurs in localities impracticable to work under the old methods of extraction. Until, then, it is possible to find a market for everything it will be impossible for the work to be a success or to show a profit.

As an experiment a certain amount of Dichopsis and Cullenia timber (the standing stock of these, so far as enumeration has gone, amounts to 60 per cent of the whole crop) was sawn up at Trichur (in M.R.Ry. Rao Bahadur T. Namberumal Chetti's Mill) the proprietor kindly arranging to make the planks up into rubber, tea and oil cases and to send them out as samples to firms and others likely to be interested. So far, not a great deal has resulted from this, and it is now proposed, in the current year, to supply the Mills with a large quantity of the timbers named so as to be in a position to place these boxes on the market and to treat this enterprise on a more or less commercial scale. It would be idle to assert that financial success is immediately assured; clearly it is uneconomical to send wood for conversion to so great a distance and then to take the manufactured article to the market via the place of its origin, but until there is some assurance of a market it is out of the question to organize milling arrangements near, or in, the forests. That the country wants boxes admits of no doubt, the figures of imports from abroad show this conclusively, though it remains to be shown whether our woods will be acceptable, either in planking or as three ply. If our woods find a market it will then be necessary to institute milling, and possibly three ply, machinery, at additional capital expenditure, to meet the demand. Whether this can be done at a profit or not will be a matter for very close examination, after an intensive examination of the forest and complete enumerations, which have not yet been undertaken—any plan must be made for some years ahead. It may be hoped that the Chief Forest Engineer will be able to accord this project a very early place on his programme; an existing "scheme" is sometimes heard of—there is at present no "scheme" for the working of the Chenat Nair forests. Much useful work of a pioneer nature leading to the collection of information and the gaining of experience, obtainable in no other way, has been done and were work to be stopped at once for good and all the money spent at Chenat Nair would have been well spent. To make the enterprise pay, the outturn must be more than doubled—the interest and overhead charges, when applied to small quantities, raise the cost of marketing a cubic foot to an alarming figure—and before this can be done a market must be assured for the outturn. That this will ultimately be achieved is probable; in the meantime there will be no market developed without the material with which to feed it.

Other uses for the timbers available will no doubt be found and investigations are being carried out with the help of the Forest Research Institute, Dehra Dun.

Sixth Circle.

Similarly the conversion into sleepers, in the forest, of timber found on felling to be too unsound for sale in the log is being undertaken. Also some revenue is being realized on the sale of branchwood for fuel.

The labour available (still rather inefficient and therefore expensive) is gradually being trained to the use of modern appliances and methods, while the subordinate staff has shown itself apt, on the whole, in accommodating itself to the new conditions. But it is regretted that it is necessary to record the outbreak, early in the hot weather of the current year, of an epidemic (sparing neither labour, subordinate nor executive) of malaria of a particularly bad type which led to considerable disorganization of the work for a time. Also it is probably impossible to work during the rains in July and August. It is thus seen how, at present at any rate, the working part of the year is reduced.

The following shows the revenue and expenditure relating to the Exploitation division for the whole year :—

	Rs.
Revenue	99,841
Expenditure—	
A. Works	1,20,591
B. Establishment	31,775
Total ...	1,52,366

showing a deficit of Rs. 52,500 without interest or depreciation charges. As some set-off there was a balance of stock of about 20,000 cubic feet, at rail and in the forest.

Exploitation in the other divisions of the Circle continues on the lines of the previous year. As showing how development is proceeding it is of some interest to note that 145,000 cubic feet of timber was extracted from the North and South Mangalore divisions in 1922–23 as against 13,000 cubic feet from these areas in 1912–13.

(*a*) *System of Management.*

(i) Major Forest Produce.

The different sylvicultural systems in force were—

Clear fellings.—One hundred and seventy-three acres in the Mudumalai forests of the Nilgiris, 83 acres in Begur and Chedleth Ranges of Wynaad division, 201 acres of teak and natural forests in Nilambur and 65 acres in South Mangalore were clear-felled during the year.

Uniform method.—This method may perhaps be stated to cover the working of the Chenat Nair forests, the area worked during the year being 410 acres. It is probable, however, that the extraction of timber felled in previous years and lying scattered in the forest, over an area not worked under the uniform or any other method accounts for the recording of so large an area.

Selection method.—Two hundred and thirty-seven acres in *South Mangalore* and 175 acres in *North Mangalore* were worked under this system.

Improvement fellings.—Four hundred and sixty-one acres were worked in *South* and *North Mangalore* and in the Nilgiris, the work in the last two divisions was confined to thinnings. Improvement fellings of teak alone over 305 acres were undertaken in the *Wynad*, the trees marked were sold standing.

Simple coppice and coppice with standards.—Fuel coupes aggregating 713 acres under the former system and 328 acres under the latter were worked in *North* and *South Mangalore*, *Palghat* and the *Nilgiris*.

Unregulated fellings.—Extraction of sandalwood—the only item under this system—was carried out in *North* and *South Mangalore* and the *Nilgiris*, the outturn being about 48 tons.

(ii) Minor Forest Produce.

Bamboos and miscellaneous produce.—The right to remove bamboos was generally leased out in all the districts except in Nilambur where a large quantity required for floating purposes was felled departmentally. A small number required by the

Central Jail, Coimbatore, for tent poles was supplied departmentally from the Palghat division. Other items of minor forest produce were leased out in all the districts except in the Mudumalai Range of the Nilgiris, where the work was undertaken departmentally. *Sixth Circle.*

Fodder grass and hay.—Fodder grass was as in previous years leased out in the Palghat division. There was no collection of hay anywhere.

Grazing.—This was as usual regulated by the issue of permits, except in parts of the Palghat division where the reserves were under panchayat management. The revenue from areas under departmental management was Rs. 33,026 against Rs. 29,144 in the previous year. The increase occurred in *South Mangalore* and was principally due to the collection of fees on cattle taken to the Kulgunda fair.

(*b*) *Agency of exploitation.*

(i) Departmental Agency.

Departmental operations were mainly confined to the timber operations in all the divisions of the Circle and to sandalwood in *North* and *South Mangalore* and in the *Nilgiris*. Three fuel coupes in the South Mangalore division were worked departmentally for supply to Mangalore town and the produce was sold *in situ* to contractors at fixed rates. Departmental fuel operations in the Nilgiris were curtailed during the year by the sale of coupes standing in the Ootacamund and Coonoor ranges.

(ii) By Purchasers.

Major produce.—This chiefly relates to the lease of fuel coupes in all the divisions except Nilambur and the Wynaad, and to the removal of teak marked for improvement fellings in the Wynaad and timber in the areas clear-felled for planting in Nilambur.

Minor forest produce.—This relates to the lease of bamboos and minor forest produce in all the divisions except Nilambur where bamboos were felled departmentally. There was no demand for Nux-Vomica during the year. The lease of Dhupa fruits in *North Mangalore* to the Eastern Development Corporation for a period of thirty years from 1913–14 was terminated during the year, as the Company were unable to proceed with the work. The lease of catechu trees in *North Mangalore* for the manufacture of cutch and of canes in Nilambur are perhaps a few of the special items included under minor forest produce.

(iii) and (iv) By right-holders and free grantees.

The quantity and value of produce under the heads is given below :—

—	Timber in thousands of cubic feet.	Value.	Fuel in thousands of cubic feet.	Value.	Bamboos.		Grazing value.	Other M. F. P. value.	Total value.
					Number.	Value.			
		Rs.				Rs.	Rs.	Rs.	Rs.
Free grantees	5	234	..	..	1300	12	674	639	2,259
Right holders	9	3,780	..	..	..	..	..	..	3,780
At concession rates ..	..	..	..	..	..	..	..	..	..
Total ..	14	4,714	..	..	1300	12	674	* 639	6,039

* Includes Rs. 603 value of metal, etc., removed by the Local Fund Department.

(*c*) *Outturn and sources of forest produce.*

The total outturn of major produce and the value of minor forest produce extracted from all classes of forests and by all agencies during the year under report are compared with those of 1921–22.

—	Timber in thousands of cubic feet.	Fuel in thousands of cubic feet.	Bamboos value.	Gross value of minor produce including grass and grazing.
			Rs.	Rs.
1922–23	1,316	4,416	20,033	68,959
1921–22	823	2,330	17,897	65,143

Sixth Circle.

The increase under timber is due to the resumption of operations in Nilambur, which were suspended during the last year, consequent on the disturbances.

The increase under fuel is only apparent and occurred chiefly in *North Mangalore*, where the outturn from coupes has been calculated on the money value against the contractors' figures in the previous year, and partly to the increase in the value of trees on darkhast lands.

Bamboos.—There was an increase in Nilambur ; reduced by decrease in Palghat due to non-sale of bamboo coupes.

Grazing.—The total number of cattle was 136,231 against 106,535 allowed to graze in the previous year. The increase is mainly due to cattle taken to the Kulgunda fair in *South Mangalore*.

CHAPTER V.—FINANCIAL RESULTS.

The revenue and expenditure for the year are compared below with those of 1921-22 :—

	1921-22.	1922-23.
	RS.	RS.
Revenue	840,759	928,373
Refunds	1,305	4,135
Net ...	839,454	924,238
Expenditure—		
Conservancy and Works	656,378	569,381
Establishment	440,358	483,214
Total ...	10,96,736	10,52,595

[NOTE.—The expenditure shown above includes the whole amount spent on account of the Forest Research Officer and of the Inspector of Livestock (Rs. 33,000) which is not fairly debitable in whole to the Circle and the cost of the reconstruction of buildings (Rs. 17,000) in Nilambur damaged in the rebellion.]

The increase under revenue was largely due to the sale of elephants during the year under report whereas there was no sale in the previous year. There has been a falling off (to the extent of Rs. 34,000) in the amounts realized for timber, particularly in *Nilambur* (a decrease of Rs. 74,000), the *Wynad* (a decrease of Rs. 29,000) and the *Nilgiris* (a decrease of Rs. 12,000). As some set off the two *Mangalore* divisions show an increase of Rs. 53,000, and the progress of development of the timber forests in these divisions is highly satisfactory, also *Palghat* (including exploitation) shows an increase of Rs. 28,000. The slump in the older timber markets continues and is responsible for the falling off in the revenue : it is of course impossible to say when there may be a recovery or to what causes the depression is due. The increase in railway rates and for other classes of transport are, too, adverse factors. The average price realized in March 1922 for Wynaad teak, sold at Hampapur, was Rs. 2-15-7 per cubic foot, in March 1923 this had declined to Rs. 1-8-4 per cubic foot. The falling off in the Nilambur teak sale rates is about 8 annas per cubic foot as compared with 1920 and the falling off in revenue is also partly accounted for by the sale, on river bank Nilambur, of a considerable quantity—the decrease of revenue on this account is reflected on the expenditure side of the account, the timber not having to be floated to Beypore.

The value of timber on hand at sale depots at the end of the year amounted to Rs. 1,68,000 or Rs. 1,08,000 more than twelve months previously. Also the outstandings of revenue (principally on account of timber) increased by Rs. 47,000 to the rather large figure of Rs. 2,31,956. Contractors find difficulty in paying for the timber purchased by them and are experiencing difficulties which must occur at some time or other in every form of business. All possible avenues by which to sell at more favourable rates are being explored ; for example, it is proposed to sell the Wynaad timber at rail centres instead of in the forest, while an experiment is being made in the direction of selling Nilambur teak in squares and scantlings in Madras. The competition of Burma teak, which can be delivered at comparatively small cost at Madras and other ports is acute, but there seems to be no reason why the department should not be able to compete successfully. For the time being, however, we are woefully ignorant of markets and market conditions and the recent appointment

of an Utilization Officer is to be welcomed. It may also be hoped that the appointment of a qualified Forest Engineer as the head of the new Engineering branch may lead to some reduction of the transport charges; if the selling rates cannot be increased, there is undoubtedly scope for reduction in the cost of production. *Sixth Circle.*

The decrease under Conservancy and Works is largely due to the non-recurrence of the capital expenditure on machinery, etc., for Chenat Nair in the previous year. On stores, tools and plant there was decreased expenditure to the extent of about Rs. 66,000. Per contra, an additional Rs. 26,000 was spent on extended departmental timber operations.

The increase under Establishment (Rs. 43,000) is due to the larger number of officers attached to the Circle (including the Forest Exploitation Officer) and to the increased pay drawn by Provincial Service Officers. An Imperial Officer was found for *South Mangalore* for the whole year, two Assistant Conservators (one working in Coorg) under training, were a charge on the Circle for the whole year and one for a part of the year. Also the leave allowances of several officers had to be met.

Of the revenue realized during the year, 74 per cent was from major produce, 6 per cent from minor produce, 4 per cent from grazing and 16 per cent from other sources. Of the expenditure, 51 per cent was on exploitation, 28 per cent on upkeep and improvement of forests, and 21 per cent on miscellaneous items.

The capital expenditure of the year may be placed at Rs. 85,000.

CHAPTER VI.—RESEARCH AND EXPERIMENTS.

Sylvicultural research is in the hands of a special officer, under the control of the Conservator of this Circle. A special report on the work in progress is separately prepared. Hitherto, practically no final results of the experiments and observations in progress have been made available. The work of the Research Officer was much hampered by the reduction of his travelling allowance allotment; if such an officer cannot travel (his principal experimental and observation plots are situated in the Palghat, Nilambur and Mangalore divisions, as well as Coorg), it is obvious that his value is much reduced.

As usual, minor experiments were carried out by the District Forest Officers.

CHAPTER VII.—ADMINISTRATION.

During the year under report the much needed step of the creation of the Chenat Nair Exploitation Unit as an independent charge was sanctioned, Mr. H. A. Irwin assuming charge of the unit from 1st October 1922.

Tours.—Mr. Tireman, as Conservator of the Circle, inspected the forests of the *Nilgiris*, *Palghat*, the *Wynaad*, *South Mangalore* and *Coorg*. Mr Wimbush inspected the forests of the Nilambur division. The writer inspected the Chenat Nair Forest in Palghat and the Mudumalai and other forests in the *Nilgiris*. None of the District Forest Officers were able to carry out the prescribed amount of touring on account of the reduction of the budget allotment for travelling. For the same reason the inspection and supervision work of Range officers was inadequate. It must be obvious that, with supervision and inspection curtailed in this manner, the direct and indirect loss of money by Government must be considerable. The Acting Chief Conservator (Mr. Tireman) visited the *North* and *South Mangalore* divisions and the permanent Chief Conservator of Forests (Mr. S. Cox) visited the Mudumalai and Chenat Nair forests. His Excellency the Governor visited the Chenat Nair forests and was present at the sale of elephants at Olavakot.

Inspections of District Forest Offices.—Only the Palghat and Nilambur District Forest Offices were inspected during the year. The remaining were not inspected owing to frequent changes of officers in charge of the Circle. All the Range offices, with the exception of that at Ootacamund, which was inspected after the close of the year, were inspected.

List of District Forest offices audited.—The accounts of all the District Forest offices were audited by the Local Fund Audit Establishment and the results were generally satisfactory.

Sixth Circle.

Vernacular Training School.—No school was held in this Circle.

Health of the Establishment and sanitation.—Four forest guards, one tannahdar and two elephantmen died of Malaria, and one forest guard died of smallpox. One Range clerk committed suicide. One forest guard died as the result of an accident.

The health of the establishment was not satisfactory in *North Mangalore*, the *Wynaad*, a large part of *Palghat*, and on the slopes of the *Nilgiris*.

In *Palghat*, anti-malarial measures were undertaken at Sappal (the headquarters of the Chenat Nair Exploitation division) and Dhoni by clearing and burning the growth round the buildings. The well at Dhoni was also covered with wire gauze. These measures have not, however, had a completely beneficial effect. The Forest Exploitation Officer and most of the subordinates at Sappal were prostrated by malaria of a particularly bad type. The Surgeon-General with the Government of Madras, after visiting Chenat Nair, has expressed the opinion that it should not be a particularly expensive matter to keep the places where the staff live completely free from malaria if a small malaria party were employed and the officers working in the forests thoroughly understood how to protect themselves. Meanwhile, malaria, which reduces efficiency, consequently affecting the financial side of the work of the department, goes on.

CHAPTER VIII.—GENERAL.

(i) Formation and Management of Panchayats.

(To include the Forest Village System.)

The panchayat system was in operation in the *North* and *South Mangalore* and *Palghat* divisions.

In *North* and *South Mangalore*, panchayats were formed during the year under the Forest Village System. Under this system the villagers are allowed to collect and remove leaves for manure from unclassified trees and dead fuel and to clear undergrowth to a maximum distance of half a mile from their cultivation. The panchayats are required to protect the forests from fire and other damage and are eligible for a refund of half the grazing revenue if the forests are well protected and the concessions granted are not abused.

In *North Mangalore*, eight panchayats were formed for thirteen isolated reserves which are reported to have worked fairly satisfactorily so far. The experiment is being continued.

In *South Mangalore*, only two panchayats were formed (about the beginning of January 1923) the results, so far, being as in *North Mangalore*.

In the *Palghat* division, the management by Madukkarai, Ettimadai and Sundakamuthur panchayats, under the control of the Revenue Department, is reported to have been unsatisfactory; the Collector of Coimbatore has, however, extended the period of working up to December 1923 to see if there will be any improvement.

In the *Erode* taluk, owing to complaints against the previous panchayatdars, the panchayats were reconstituted, a fresh election having been held. In the reconstitution, no panchayats were formed for Arachalur reserve as the Arachalur village refused to admit the members of the adjacent villagers as panchayatdars, and as it was impossible to arrive at any agreement the reserve reverted to departmental control.

The working of the panchayats in the four reserves of the above-mentioned taluk (Chennimalai, Voipady, Vellikaradu and Kongampalayam) and the general protection is reported to have improved since their reorganization. At the outset there were several cases of illicit grazing which were severely dealt with by the imposition of heavy compounding fees. The most satisfactory feature lately is that the panchayatdars themselves are reporting offences. The Circle office has no information of the results of the Chief Conservator's order (in November 1922) to the Forest Panchayat officer to inspect the forests in question.

(ii) MEASURES FOR IMPROVING LOCAL SUPPLIES AND FACILITIES.

Except in *Erode* and the denuded parts of the *Coimbatore* district within the Palghat division the people have no difficulty in regard to their requirements of forest produce. In *North Mangalore* the demand for leaf manure was met by the formation of panchayats to a greater extent than in *South Mangalore*. In the latter division a contractor who purchased a fuel coupe was under agreement to sell wood at *Mangalore* at a fixed rate, with a view to artificially reduce the prices in that town. It is difficult to understand how the sale at fixed prices of a very small amount of wood can seriously affect the price of fuel in a town of 54,000 inhabitants, and probably the only result has been to reduce the revenues of the department. Happily, since the 1st April 1923, the experiment has been abandoned. *Sixth Circle.*

It is reported that owing to the heavy rainfall over most of the circle no measures for the improvement of the water-supply are called for, but it is probable that something in this direction might be appreciated in parts of the Palghat division.

In the *Mangalore* divisions land in reserved forest, fit for permanent wet cultivation, is being disafforested as the demand for it arises. The irrigation resources of villagers and others in *South Mangalore* and the *Nilgiris* are augmented by permission granted to divert water from streams in the reserves. In the former division the Chief Conservator has authorized the free removal of green leaf manure on easy conditions provided the people form forest villages.

(iii) TIMBER TRANSIT RULES.

These and the sandalwood transit rules are reported to have worked satisfactorily.

(iv) JUNGLE TRIBES.

In the *Palghat* division, the District Forest Officer's proposal to form a Mulcer settlement at Muthikulam in Attapadi Block VI by leasing free of rent an area of abandoned cultivation with a view to encourage these people to settle and to provide labour for the department, was approved. The question of placing the settlements in Attapadi Block I in Mannarghat range on a proper basis was under consideration. During the Mappilla disturbances, the Mulcers took advantage of the absence of the subordinates to fell a considerable area of virgin jungle and to cultivate it, leaving their old lands. Arrangements were made to have new areas surveyed, demarcated and allotted to them on certain conditions, one of which was that they should plant up with teak the area devastated by them.

(v) MINING AND QUARRYING.

Nil.

(vi) LIVESTOCK.

(*a*) *Elephants.*

There were 107 elephants on the books at the beginning of the year, 25 were captured during the year and 3 were born. Five died, of which one was a new born calf. Three were transferred to the Fifth Circle and 40 were sold. There were 87 elephants, valued at Rs. 2,64,000, at the close of the year. Rs. 1,01,425 was realized by the sale.

(*b*) *Other animals.*

There were 118 buffaloes and 23 bullocks at the beginning of the year. Three bullocks were purchased during the year, 24 buffaloes died and 6 buffaloes and 1 bullock were sold, leaving a stock of 83 buffaloes and 25 bullocks valued at Rs. 10,000.

(vii) VETERINARY ESTABLISHMENT.

Forester P. K. Achutha Menon who had undergone the course at the Madras Veterinary College was posted as Veterinary Assistant at Nilambur. He joined duty as Veterinary Assistant on 1st February 1923. The Veterinary Assistant at Gudalur continued to be in charge of the animals of the Nilgiris and the Wynaad.

(viii) CIVIL SUITS.

Sixth Circle.

There was only one new suit during the year—in *South Mangalore*, an individual filing a suit in respect of 115 logs of timber for which he had paid but which, he alleges, were not delivered to him. The suit is still pending. The two suits in the *Wynaad* and *Nilambur* as well as the appeal to the High Court on a case from *South Mangalore*, referred to in the last year's report, are still pending.

(ix) CONTROL OF UNRESERVED LANDS BY THE FOREST DEPARTMENT.

There is nothing important to report except that in *South Mangalore* it is proposed to push on with further reservation in a portion of the Kasaragode taluk, South of the Peishwani river.

OOTACAMUND,
31*st July* 1923.

R. D. RICHMOND,
Conservator of Forests, Sixth Circle.

ENCLOSURE.

Statement showing sanctions for works exceeding Rs. 5,000 accorded under the powers delegated in G.O. No. 1755, Development, dated 17th September 1921.—*Nil.*

ADMINISTRATION REPORT OF THE MADRAS FOREST COLLEGE, COIMBATORE, FOR THE PERIOD FROM 1ST APRIL 1922 TO 31ST MARCH 1923.

CHAPTER I.

CONSTITUTION.

Staff.

Principal.—Mr. C. C. Wilson, the writer of this report, was the Principal throughout the year under review.

Senior Instructors.—The posts of Senior Instructors were held by the following officers during the year:—

Name of officer.	Period.
Mr. G. C. Robinson	Throughout the year.
„ W. C. Hart	Throughout the year.
Junior Instructors.—	
Mr. E. K. Krishnan	Throughout the year.
„ A. R. Brand	Throughout the year.

The two posts of sub-assistant surgeon were held by Messrs. K. Narayana Nayar, V. Natesan and T. R Venkatramanan. These officers delivered occasional lectures in first-aid and camp hygiene in camp. First-aid lectures were delivered in headquarters to the students of the senior division by the Medical Officer in charge of the Lawley Road Dispensary.

Instruction in physical training, gymnastics and drill were as usual given to the students of both the divisions by the College havildars under the able supervision of Mr. A. R. Brand, the 2nd Junior Instructor.

In addition to the ordinary bi-weekly drills, the practice in accordance with which students do physical training every day for 15 minutes between the 2nd and 3rd lectures in the cold weather and before lectures in the hot weather was continued with beneficial results.

In this connexion it may be noted that the chest and height measurements and weights taken on the first day of arrival of students at the beginning of their course and again on the last day at its conclusion have this year shown that considerable improvement in physique has taken place. Every student has increased markedly in chest measurement: one—a student 6 feet in height from Bengal—has increased over 6 inches in girth of chest. Nearly all have also gone up in weight, though hardly any are so fat as when they arrived; many have also put on half an inch or more in height.

Board of Visitors.

Mr. S. Cox, C.I.E., I.F.S., the Chief Conservator of Forests was ex-officio President of the Board of Visitors during the year under report except for two months from the 12th of August 1922. On the 29th of March 1923 he went on long leave. Mr. H. Tireman acted as Chief Conservator for these periods and was President of the Board of Visitors.

The following officers were on the Board during the year:—

Mr. H. Tireman, from 1st April 1922 to 11th August 1922.
„ H. F. A. Wood, throughout the year.
„ H. A. Latham, from 1st April 1922 to 4th February 1923.
„ C. E. C. Fischer, throughout the year.
„ A. B. Jackson, do.
„ R. D. Richmond, from December 1922 to 31st March 1923.
„ A. Wimbush, from 12th August 1922 to December 1922 and from 5th February 1923 to 31st March 1923.
„ D. T. Barry, from 1st April 1922 to 18th March 1923.
„ J. H. Longrigg, from 19th March 1923 to 31st March 1923.

CHAPTER II.

INSTRUCTION.

(1) *Teaching.*

Lectures were delivered to the students in accordance with the College time-table.

The 1920–22 division, who were examined in June 1922, were well above the average in general ability, common sense and efficiency. Five students were awarded honours certificates and 15 higher standard certificates. Details are given later (vide pages 4 and 5).

The 1921–23 division, the present senior year, is a promising one; they appear to be a keen, hard-working lot of young men, and they should do well in their examinations.

At the commencement of the year under review there were in this division 29 students, all of whom are still at the College and likely to obtain certificates.

The final examination in Physical science for this (the 1921–23) division was held in June 1922 with satisfactory results.

The Chief Conservator's prize for the best student of this division was awarded to K. Shankarnarayana Rao in June 1922.

The 1922–24 division, the present juniors, are an average lot. One private student left the college at his own request owing to inability to follow the course.

At the commencement of the year 27 students were present; this number was reduced by one as shown above, and there are at present 26 students in the division. Of these only four are Madras Government students, as the Rangers' ranks are over-ful, and the supernumeraries already over 30 in number. Please vide in this connexion, the roll of names of the students of the junior division given in Statement II appended to this report.

At the lectures in Utilization and Botany in the Beddome Lecture Hall the Curator of the Museum continues to assist as Demonstrator with beneficial results.

The Principal delivered lectures to both divisions in Utilization, Sylviculture and Forest Economics at various times. He also undertook the instruction of the seniors in the Identification of Timbers.

(2) *Results of Examination.*

The Board of Visitors met at Coimbatore on the 27th June and remained till the 30th June 1922 on which date the prizes and certificates gained by the students of the 1920–22 division were given away.

The final examination of these students was held in June 1922. Thirty-five students appeared for the examination and the following list shows the certificates awarded in order of merit. No student failed to gain a certificate and five gained Honours.

Rank.	Name of student.	Name of Circle, State or Province to which attached.
	Madras Ranger Honours.	
1.	P. Sithapathi Ayyar...	Fourth Circle.
2.	A. K. Kunhunni Nayar.	Fifth Circle.
3.	M. B. K. Molagoda ...	Ceylon.
4.	V. Ramalingam ...	Ceylon.
5.	K. Annappa Bhandary..	Private.
6.	K. Seetharama Hebbar.	Private.
7.	N. S. Poonacha ...	Coorg.
8.	B. Kotilingam ...	First Circle.
9.	M. S. Krishnaswami ...	Fourth Circle.
10.	G. V. Moghe	Bombay.
11.	N. M Mandanna ...	Sixth Circle.
12.	B. R. Ananda ...	Central Provinces.
13.	K. Gopalakrishna Rao.	Bombay.
14.	S. C. Ramalingam ...	Ceylon.
	Madras Ranger Honours—cont.	
15.	J. K. Bodas	Bombay.
16.	M. V. Ganasam ...	Sixth Circle.
17.	P. A. Madhavan ...	Fifth Circle.
18.	N. Rajagopala Chetti.	Third Circle.
19.	M. Abdul Hamid ...	Hyderabad.
20.	G. A. Vagle	Bombay.
	Madras Ranger Lower Standard.	
21.	A. Thirupathi Rayadu.	First Circle.
22.	G. R. Kelkar	Bombay.
23.	M. Waris Hussain ...	Rewa State.
24.	Balakrishna Das ...	Keonjihar, Orissa.
25.	A. Narayana Rao ...	Central Provinces.
26.	Hans Raj Dutt ...	Do.
27.	H. Wijiesinghe ...	Ceylon.

Madras Ranger Lower standard—cont.

28. K. O. Anandan ...	Fifth Circle.	32. S. R. Punde	Bombay.
29. L. S. Chati	Central Provinces	33. M. B Ayyanna ...	Coorg.
30. J. B. Rodrigues ...	Second Circle.	34. D. A. Abeyaratne ...	Ceylon.
31. M. Hasnuddin Khan.	Hyderabad.	35. P. Gopalan	Second Circle.

The Government and other prizes were awarded as follows :—

(1) Best second-year student (gold medal)—P. Sithapathi Ayyar.

(2) The Campbell Walker Prize for the best all-round ranger—K. A. Bhandary.

(3) The Brazier Prize for the best out-door ranger—K. A. Bhandary.

(4) The Lodge Prize for the best second-year student in Forest Engineering—P. Sithapathi Ayyar.

(5) The Madras Conservators' Prize for the best second-year student in Forestry—P. Sithapathi Ayyar.

(6) The "Indian Forester" Prize for the best essay by past students—Ranger T. D. Ponniah.

(7) The "Indian Forester" Prize for the best essay by present students—P. Sithapathi Ayyar.

(8) The Pentland Shield for the best athlete in the college—M. B. Ayyanna.

(9) The Fischer Challenge Cup for the best gymnast in the college—S. C. Ramalingam.

(10) The Chief Conservator's Prize for the best student in the junior division—K. Shankaranarayana Rao.

Messrs. A. Wimbush, E. M. Crothers, T. Clear, S. V. Devadasan, A. F. Minchin, Capt. H. A. Irwin, M.C., Captain M. G. Platts, M.C., and Mr. R. B. Cornwell were the examiners at the final examinations in June 1922. The examiners' reports were very favourable.

Mr. Morritt of the Police Department examined the students in gymnastics.

As pointed out in the previous administration reports the want of text-books in Range Administration and Engineering is a heavy handicap to the instructors in these subjects. It is hoped that Mr. Pipe's "Engineering Manual" will be completed before long.

(3) *Practical training in headquarters.*

Practical training in the Demonstration Forest and in the Engineering Park continued throughout the year to form an important part of the college curriculum.

The sowing of the coupe, after felling, with seeds of Cassia auriculata, followed by planting up with species such as Melia Indica, Albizzia lebbeck, tamarind, Hardwickia binata and Cassia Siamiea, and the planting out of sandal, formed the chief part of the sylvicultural work done by the students in the Demonstration Forest. These operations were, this year, unusually successful owing mainly to the special attention devoted to the aeration of the soil round young plants; and in the case of sandal planting to the adoption of a system of germination of the seeds in bamboo baskets with suitable small hosts, and the planting out of these baskets in groups in various coupes.

On the 28th June 1922 the Madras Forest College exhibited in the local Cinema an interesting and instructive series of films of up-to-date lumbering operations in America, and a few slides representing similar work as it was done in the Government forests at Dhoni in South Malabar. This exhibition formed a special feature of this year's programme for "June week". A big audience, including many members of the Legislative Council, of the Forest Advisory Committee and other public men, as well as Forest officers, Government officials, and a large number of the general public, were present.

Mr. C. S. Martin, Chief Forest Engineer, explained the films in a very lucid manner, demonstrating, in particular, the superiority of the "Clyde Catterpillar Tractor" to the present slow and wasteful method of using buffaloes, etc., for dragging timber.

4. *June week and prize giving.*—On the 30th of June which formed the concluding day of the "Forest week", an unusually large and distinguished gathering of officials and non-official Europeans and Indians assembled in the

enlarged hall in the Madras Forest College to witness the distribution of certificates, medals and prizes to the successful students. His Excellency the Governor presided, while Her Excellency Lady Willingdon did the college and students the honour of distributing the prizes and certificates. Among the officers who were present at the function the college was glad to welcome the Hon'ble the Raja P. Ramarayaningar and the Hon'ble Diwan Bahadur K. Venkatareddi Nayudu, Ministers for Local Self-Government and Development respectively; Mr. Cox, C.I.E., I.F.S., Chief Conservator of Forests, Madras, and Mrs. Cox; Mr. W. F. Perree, C.I.E., I.F.S., Chief Conservator of Forests and President of the Imperial Forest Research Institute and College, Dehra Dun, and Mrs. Perree.

After the prize distribution, a garden party was held in the college grounds at which the Board of visitors and staff of the college were hosts.

The students of the 1921–23 division were examined in First Aid at the end of the March 1923. Dr. C. M. Philip, L.M.S., Assistant Doctor at the Coimbatore Municipal Hospital, conducted the examination. All the 29 students of this division gained the Saint John's Ambulance certificate for proficiency. As, usually, only some 60 or 70 per cent pass, the result this year is very satisfactory.

The periodical and half-yearly examinations held during the course of the year show that satisfactory progress is being made by both divisions.

CHAPTER III.

ADMINISTRATION, TOURING, HEALTH AND CONDUCT.

Administration.

The Board of Visitors met at the college on the 27th June 1922 and the following important matters were discussed:—

I. *Provision of an auxiliary engine for the municipal well and of a wind mill for the arboretum well.*—The board resolved to press on the notice of the Chief Engineer the urgent necessity of hastening forward the erection of the new pump.

(This has since been completed, but the work is most unsatisfactory.)

II. *Marks for gymnastics.*—The Board resolved to substitute the words "drill and physical training" for the words "Drill and gymnastics" wherever they occur in the rules of the college. It was also decided to present the "Fisher Cup" to the best tennis player among the students instead of to the best gymnast.

III. *Panelling the enterance hall of the college.*—The Board approved of the Principal's proposals to adopt Mr. Nicholl's decision for panelling the main entrance hall. The work has since been completed.

IV. *Cost of education at the Forest College.*—The Board considered that the question required further examination by the Chief Conservator, Mr. Perree and the Principal of the College before a definite decision could be arrived at. (Government has since issued orders raising the tution fees from Rs. 900 to Rs. 1,500 per student per annum).

V. *Promotion of rangers holding Lower Standard certificates.*—The Board adopted the following resolution passed by the Conservators' conference in connection with the same question:—

"The conference is in favour of retaining the provision for the special promotion of Honours certificate holders to the fifth grade when vacancies occur and the distinction between the Higher and Lower Standard certificates, but considers that it is not desirable to reserve vacancies in the sixth grade to the detriment of the interests of the Lower Standard Certificate-holders whose claim to promotion should be considered together with those holding Higher Standard Certificate." No definite orders of Government have yet been obtained in the matter, and the question is to be discussed again at the approaching Board of Visitors' meeting, in June.

VI. *Award of marks for practical work and general efficiency at the Madras Forest College.*—The Board of Visitors agreed with the Principal that the system of

examining and marking requires revision and instructed him to place before them definite proposals in this connexion at the next Board of Visitors' meeting in June 1923.

VII. *Control and use of the Forest College huts in The Nilgiris.*—It was decided that the huts in question should be under the control of the Conservator of Forests, Sixth Circle but that they should be reserved for the use of the College students and the College staff whenever the Principal so desired.

VIII. *Increase of pay of the second clerk from Rs.* 35—60 *to Rs.* 60—4—80 *grade.*—This was sanctioned by Government.

IX. *Amendment of rules* 14 *and* 16 *of the College Calendar relating to deposit and estimated cost of living.*—These sums were raised from Rs. 150 and Rs. 1,325 to Rs. 225 and Rs. 21,980 respectively.

2. *Cost of education.*—The cost of education per Madras Government student at the College has increased greatly during the year. This is due to the smaller number of Madras Government students at the College.

However, now that the tuition fees chargeable to other Administrations have been raised from Rs. 1,800 to Rs. 3,000 for the two years' course, and when various economies that will be possible shortly become operative, the net cost to the Madras Government of the actual running of the College will be reduced to some four or five thousand rupees per annum; and this should be within a year or two.

Taking the figures given in Statement No. I. appended to this report, the actual net cost of running the College to Government this year has been Rs. 75,048.

N.B.—A full report on this matter has been recently submitted. Please vide this office No. 882, dated 6th June 1923.

3. *Touring.*—The camping during the year under review has been in accordance with the sanctioned programme except that during January the Senior division camped at Topslip instead of at Dhoni for want of a camping site at the latter place; and that in February they could not go into camp at all owing to lack of funds to pay the travelling allowance of the students and staff. It is important that such curtailment of the all-too-short touring season at the College should not be allowed to recur, as the instruction of the students is most adversely affected thereby.

The programme of tours followed by the students and the works carried out by them are given below.

Senior division.

April and May 1922—*Walayar and Arambyshola* (*Camp Walayar*).—The students of the 1920–22 division camped one day at Walayar on 23rd April 1922 and received instruction in sylviculture and botany.

Camp at Arambyshola.—During this camp many of the students of the 1920–22 division fell ill owing to the malaria contracted at Dhoni. The works done by them included—

Laying a pipe line for water-supply to the camp, final practical survey examination, study of charcoal manufacture, and investigation of various road projects for extraction of fuel by motor transport.

September and October 1923—*Komatliyeri.*—The students of the 1921-23 division entered on their second year in August 1922 and became the senior division. They camped at Komattiyeri as usual where they studied mainly sandalwood, and road construction.

November and December 1922—*Nilambur and Nedungayam.*—In November and December the senior students of the 1921–23 division toured in the South Malabar division. They visited the Beypore Depot,—where they studied the timber accounts; and also the New Malabar Timber Yards and Saw Mills at Kallai,—where they studied the management of saw mills. At Nilambur and Nedungayam they studied the teak plantations, and all the operations connected therewith, in detail; and also they learnt a lot of botany, and a certain amount of engineering including rafting of timber and river transport generally.

January and February 1923—*Topslip.*—In January instead of going to Sappal Ridge above Dhoni the Senior students camped at Topslip in Tunacadavu range of the *South Coimbatore* district. Here they devoted the greater part of their time to the study of the new ghat road, now under construction, and to the preparation of their stock maps and reconnaissance reports.

Junior division.

April and May 1922—*Bandyshola, Coonoor.*—The students of the 1921–23 division were engaged at the Bandyshola camp in botanical, sylvicultural and engineering excursions and operations.

September and October 1922—*Sadivayal.*—In August 1922 the new 1922–24 students arrived and constituted the new junior division. They camped as usual at Sadivayal in September and October where they studied the simplest forms of forest management and learnt a good deal of practical botany and surveying.

November and December 1922—*Sethumadai and Topslip.*—In November and December they camped in the Tunacadavu range at Topslip where they received practical instruction in sylviculture, engineering, surveying, botany and utilization.

January and February 1923—*Kargudi.*—In January and February the juniors went as usual to Kargudi in the Nilgiri district. Here they had exceptional facilities for receiving practical instruction in fire-protection, both by early burning and by fire-tracing. They also did some practical road-tracing and construction and a good deal of botany, sylviculture and survey.

As usual all work done on tour has been recorded in the College 'Tour journals' maintained by the instructors concerned. These journals form a valuable record of the work done by the College in the past, and are a most useful guide to successive instructors at the College.

Tour journals.—In addition to the maintenance of these journals the instructors sent to the District Forest officers concerned, through the Principal and the respective Conservators, an account of such work done as they consider will be of interest or value to the district.

District officials.—The thanks of the College are due to the District Forest Officers of the districts visited and to such of their subordinates as have taken trouble to make the College touring comfortable and instructive, and for their co-operation and assistance.

Inspections by members of the Board of Visitors.—The students were inspected in camp by members of the Board of Visitors on the following occasions:—

(1) At Arambyshola in April 1922 by Mr. S. Cox, Chief Conservator of Forests.

(2) At Bandyshola in May 1922 by Mr. S. Cox, Chief Conservator of Forests.

(3) At Topslip, during the November-December camp 1922 by Mr. Wood, Conservator of Forests fifth Circle.

They were also visited at Arambyshola by Their Excellencies the Governor and Lady Willingdon in May 1922.

(4) *Swimming.*—During the Nilambur and Kargudi camps the students of the Senior and Junior divisions respectively were tested in swimming. In the senior division all passed the test except two who were absent on account of illness. In the junior division three students were absent, on account of illness and nine failed to pass.

5. *Health.*—The general health of the studeuts while at headquarters has on the whole been satisfactory. In camp the health of the students was better than usual.

6. *Conduct and discipline.*—The discipline at the College was, during the year, satisfactory and the general tone good. The students of both years have shown themselves to be self-respecting, courteous and manly young men.

CHAPTER IV.

The Gass Forest Museum College and Students' Libraries.

(1) *Museum.*—Mr. G. Viswanatha Ayyar, B.A., the Curator, was in charge of the Museum throughout the year.

Contributions were made to the Museum during the year by forest officers and others and the gratitude of the college is due to the donors. The more important of these contributions were :—

(*a*) 29 bark samples of evergreen species.
19 seedlings of evergreen species, and
128 botanical specimens of evergreen species by F. D. Ardagh, Esq., I.F.S.,
(*b*) 10 timber panels, by Captain H. A. Irwin, M.C.,
(*c*) 6 timber panels and 7 seedlings by F. R. Madan, Esq., I.F.S.,
(*d*) 11 specimens of three ply wood by J. Brace-Brooks, Esq., of Kallai, Calicut.
(*e*) 56 photos of timber trees by the Imperial Sylviculturist, Dehra Dun.

The panels in the Museum were all cut to a uniform size and an attempt has been made to exhibit by the side of each panel, a photograph of the tree and a map of the Madras Presidency showing the distribution of the species. For the benefit of the general public, names and descriptive notes have been written on the more interesting exhibits, in vernacular characters.

That the Museum continues to increase interest for, and to attract, the public is evident from the fact that the number of visitors, during the year, rose from 21,905 in the previous year to 22,269. There is little doubt that the educational benefit of this exhibition is appreciable, and that it is doing good work in the way of advertising the timbers and other produce of the Madras Forests.

Prominent among those that paid a visit to the Gass Forest Museum during the year were :—

(1) W. F. Perree, Esq., C.I.E., I.F.S., President of the Forest Research Institute and College, Dehra Dun,

(2) The Hon'ble Mr. A. R. Knapp, C.S.I., I.C.S., First Member of Council, Madras, and

(3) R. G. Grieve, Esq., I.E.S., Director of Public Instruction, Madras.

We continue to receive specimens for identification,—chiefly timber samples,—from various firms and companies and do our best to furnish the information required.

2. *General Library.*—Including periodicals 250 books were added to the General Library.

3. *Students' Library.*—Sixteen books were added to the Student's Library, of which 9 were very kindly presented by Mr. E. K. Krishnan, one of the Instructors at the college.

CHAPTER V.

Supervision, Water-supply, Roads, Buildings, Etc.

1. *Supervision.*—During the year under report the pay of the post of overseer was fixed in a graded scale of Rs. 50—$2\frac{1}{2}$—100 and the post was made a permanent one Mr. A Marudachallam Pillai who was overseer at the beginning of the year was reverted to his permanent post of Storekeeper for unsatisfactory work; Mr. K. A. Bhandary, a private student at the College—who had done very well and who passed out in June 1922, with an 'Honours' certificate,—was appointed to the post from the 27th July 1922. His work has been quite satisfactory.

2. *Water-supply.*—The pump which at present supplies water to the College Estate broke down in June 1922 and in spite of every effort made, and of the assistance given to us by the Locomotive Workshops of the South Indian Railway, Podanur, considerable expense to Government in suppling water by other means to the

residents of the Estate was necessary before the required repairs could be effected. Again in September 1922 the plant broke down for some week or so; and since then various small parts have given out on various occasions and have had to be renewed or repaired at the local workshops in a great hurry.

An auxilliary engine and pump were asked for as long ago as 1920. The auxilliary engine arrived at last, some time in August or September 1922, but not the pump. After considerable further delay the pump arrived and the plant was erected. After various improvements, repairs and replacements this new plant was taken over by the college early in 1923, and is now working erratically and unsatisfactorily. As soon as it is possible to get the old plant thoroughly overhauled it is proposed to use it regularly and to keep the new engine and Pump as an auxilliary for use when repairs become necessary to the old plant.

3. *Roads.*—The relay of roads between the main college building and the Museum was sanctioned during the year and completed. The sum sanctioned was Rs. 3,450 and the amount spent up to the end of the year was Rs. 2,595. For want of funds the balance due to the contractor was paid in the succeeding year.

All the existing roads were kept in repair.

4. *Buildings.*—Necessary repairs to the hostels and other buildings under the control of the Principal were executed during the year.

The following semi-permanent sheds were constructed during the year under report :—

Camp.	Amount sanctioned.	Amount spent.	Remarks.
	Rs.	Rs.	
Komattiyeri	670	473	Completed.
Sadivayal	741	741	Do.
Aramby	19,609	19,555	Do.
Bandyshola	9,000	Information not available.	The work as been transferred to the VI Circle.

During the year Rs. 1,300 was sanctioned for panelling the entrance hall of the main college building and the work has since been completed.

5. *Atheletic ground.*—Rupees 1,370 was sanctioned by the Chief Conservator for reparing a third of the college atheletic ground and the work was carried out satisfactorily at a cost of Rs. 1,289.

6. *Establishment.*—The overseer of the estate Mr. K. A. Bhandary has worked well.

The Curator of the Gass Forest Museum Mr. G. Viswanathan has carried out his high duties fairly satisfactorily. However in one instance his behaviour has been open to censure. He identified certain specimens of timber on his own responsibility,—which he has no right to do,—and identified them wrong; this was done for a contractor for railway sleepers.

The Storekeeper Mr. Marudachallam Pillai has worked satisfactorily. He was on sick leave for six months in the year.

The Manager of the Office Mr. Seshagiri Rao has done his best, and is now, after nearly a year, beginning to become " au fait " with his duties. He is slow, and finds it difficult after 24 years or so in a District Forest Office to pick up the entirely new work of this office. His duties are however very heavy and he has worked hard, and is now showing improvement and progress. When he took over charge, shortly after the late Manager absconded, the office was undoubtedly in a most disorganised and inefficient state. He has improved it, though there is still room for considerable further improvement. The rest of the clerical establishment have done well considering the heaviness of the work and the undermanned condition of the office.

7. *Deputation of staff.*—Mr. G. C. Robinson, the Engineering Instructor, was deputed in July 1922 to the Sappers and Miners School of Field Engineering at Bangalore to undergo a short course of training, which he did with advantage.

CHAPTER VI.

GENERAL.

1. *Stock-taking.*—The stock of the college was checked in detail in July 1922 by the staff of the college, and many irregularities were brought to light.

These have now been set right and, with an efficient storekeeper on the increased pay at last sanctioned, the efficiency of this branch of the college has considerably improved.

2. *Athletics.*—At the annual athletic sports which were held on the 21st October 1922 there were some good performances ; the record for the mile race was lowered again this year, this time by P. Madhavan Nayar who did the distance in one and two-fifths the second less than the previous record put up last year, thereby winning the special prize offered by Mr. H. F. A. Wood, the Conservator of Forests of the Fifth Circle.

The Victor Ludorum, a Challenge Cup presented by Mr. R. D. Richmond was won by P. Madhavan Nayar and T. R. Bushanam, who tied for first place.

We have been more than usually successful this year having been runners up and very nearly victors in the local Hockey Tournament and having won the local Cricket Tournament within a few weeks of the new students of the junior division joining the College. The inter-divisional hockey match for the Cowley Brown Challenge Cup was won by the 1920–22 division in June 1922.

The Marathon Race was won this year by P. Madhavan Nayar of the senior division ; he did the six odd miles in the very good time of 38 minutes, and thereby won the price so generously given by M.R.Ry. K. Ramarajah Mannarghat Moopil Nayar Avargal.

The Inter-divisional Challenge Cup presented by the late Rasildar Major Amir Muhammad Khan Sahib for this race was won by the 1920–22 division.

The Pentland Shield for the best all round athlete in the College, awarded in June 1922, was won by M. B. Ayyanna with 25 marks, K. A. Bhandary was second with 21 and N. S. Poonacha third with 20 marks.

All the staff have as usual taken part, to the best of their ability, in the College Athletics ; this was instrumental in encouraging the students to make themselves proficient and in stimulating their keenness.

Mr. G. C. Robinson was the Vice-President of the Athletic Club throughout the year and was largely responsible for the successes achieved.

3. *Conclusion.*—The year has on the whole been a successful one as regards work and play. There are few incidents of outstanding interest ; the usual routine has been followed with success, the tone and " morale " of the College have been maintained, and the students have shown the usual improvement under hard work and strict discipline.

COIMBATORE,
30*th July* 1923.

C. C. WILSON,
Principal, Madras Forest College.

LIBRARY OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY

APPENDIX I.

STATEMENT No. I.

Statement of revenue and expenditure, Madras Forest College for 1922-23 (April 1922 to March 1923).

Particulars.		Amount.
Revenue—		RS.
I (*b*) Firewood		188
II (*d*) Grazing and grass		111
(*e*) Minor produce		2
V (*a*) Fines and forfeitures		
(*b*) Other sources		36,185
	Total Receipts	36,488
Expenditure—		
B. Conservancy and Works.		
VI (*c*) Purchase of stores, tools and plant		5,507
VII (*a*) Roads and Bridges		3,960
(*b*) Buildings		14,162
(*c*) Other works		1,540
VIII (*e*) Sowing and planting		4,080
(*g*) Other works		4
IX (*c*) Other charges		1,978
C. Establishment and Contingencies.		
I (*b*) Pay of Imperial officers		33,581
(*d*) Pay of Provincial officers		19,269
(*e*) Pay of subordinate forest establishment		16,935
(*f*) Pay of office establishment		8,189
(*g*) Local allowance		77
II (*b*) Travelling allowance of superior officers		7,119
(*c*) ,, subordinates establishment		7,256
(*d*) ,, office establishment		1,809
III (*b*) 2. Sundries		15,470
	Total Expenditure	1,40,936
	Deduct total receipts	36,488
	Net cost of college	1,04,448

But to get the true cost of the College the following should be excluded :—

	RS.	
(1) Expenditure on Museum	1,766	
(2) Pay and travelling allowance of two Assistant Conservators of Forests, under training	6,612	
(3) Pay of two peons of forests under training	192	
(4) Pay and travelling allowance of Government stipendiary students (for they would have been paid any way even if they had not been at the College)	20,830	29,400
	True net cost of college	75,048

STATEMENT No. II.

List of students, Madras Forest College, Coimbatore, 1922–24 division.

Serial number and name of student.	Circle or State to which attached.
1. B. H. Ananda Rao	Madras Third Circle.
2. S. Rangaswami	Fourth Circle.
3. U. Vridhachalam	Fifth Circle.
4. K. Dooma Chetti	Sixth Circle.
5. M. S. Khan	Hyderabad.
6. Abdul Aziz	Do.
7. A. Jayasundara	Ceylon
8. A. E. Perera	Do.
9. K. P. Rajalingam	Do.
10. K. Kanapathi	Do.
11. H. B. Divulwewa	Do.
12. G. D. Mehta	Central Provinces.
13. M. G. Sirpurkar	Do.
14. L. N. Tiwari	Do.
15. M. M. Rahim	Do.
16. D. R. Shukal	Do.
17. B. L. Gupta	Do.
18. Shiv Ram	Do.
19. Karamchand	Do.
20. Kushiram	Do.
21. H. C. Sen	Bengal and Orissa.
22. Sarat Da	O.F.S.
23. S. N. Kaul	Central India.
24. T. R. Bhushanam	Court of Wards.
25. B. Ram Das	Vizianagram.
26. T. Krishnamachari	Private student.

APPENDIX II.

Abstract showing the live-stock, stores, tools, etc., of the Madras Forest College, Coimbatore for the year ending 31st March 1923.

Description of stock.	On hand at the commencement of the year.		On hand at the end of the year.		Difference in value in favour of the year.	Difference in value against the year.
	Number.	Amount.	Number.	Amount.		
Madras Forest College, Coimbatore.		Rs. A. P.		Rs. A. P.	Rs. A. P.	Rs. A. P.
Surveying and other instruments.	2,204	7,346 9 4	2,144	6,493 9 5	..	*852 15 11
Tools	776	1,310 7 0	998	1,575 1 4	264 10 4	..
Furniture	1,617	23,187 8 8	1,655	22,785 1 5	..	402 7 3
Tents	79	13,508 3 0	79	6,330 12 0	..	†7,177 7 0
Uniforms	92	400 11 1	84	352 10 2	..	48 0 11
Scientific apparatus	1,505	578 9 6	1,361	409 0 9	..	169 8 9
Photographic apparatus	20	385 13 3	20	344 0 2	..	41 13 1
Gymnasium apparatus	9	364 3 0	9	345 3 2	..	18 15 10
Machinery (oil engine, etc.).	2	2,396 12 11	2	2,328 6 0	..	68 6 11
Miscellaneous articles	1,571	3,702 4 2	1,538	2,529 12 5	..	‡1,172 7 9
Total	7,875	53,181 1 11	7,890	43,493 8 10	264 10 4	9,952 3 5

* Due to deduction of cost on account of depreciation and to the transfer of some of the articles to "Tools."
† Due to writing off several tents condemned and sold during the year.
‡ Due to utilisation for the sheds at Bramby the piping materials in stock at the college.

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APPENDIX.

APPENDIX A.—Comparative statement of number and origin of fires that occurred during the calendar year 1922.

District.	A. Fires caused by accident or through carelessness in burning fire lines.		B. Fires entering forests by crossing exterior fire lines.		C. Fires beginning inside the reserves or fire-traced areas.														Causes unknown.		Total of A, B and C and causes unknown.	
					Owing to carelessness or accident.								By intentional firing.									
					By workmen engaged in the forests or by purchasers of forest produce and by hay cutters.		By villagers, travellers, etc., passing through the forests.		By railway engines.		By lightning or by fire balloons.		In order to obtain new grass.		In order to turn out game or to reduce cover.		Maliciously fired.		Total.					
	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
First Circle.																						
Ganjam	2	2,898	27	9,615	1	35	22	13,223	..	..	..	..	..	..	8	7,016	16	4,278	47	24,552	10	932	86	(a) 37,997
Vizagapatam ..	..	..	5	264	4	1,655	20	1,203	..	..	..	..	..	..	..	..	..	..	24	2,858	..	..	29	(a) 3,122
Godavari, Upper..	..	..	7	2,122	..	..	3	755	..	..	..	..	..	..	2	2,160	..	..	5	2,915	9	1,140	21	6,177
Do. Lower..	..	..	6	159	..	..	53	5,315	..	..	..	..	..	..	..	..	..	..	53	5,315	31	3,091	90	8,565
Kistna .. .	..	..	1	8	2	9	4	80	..	..	..	..	..	..	..	..	..	..	6	89	6	517	13	(a) 614
Total ..	2	2,898	46	12,168	7	1,699	102	20,576	..	..	..	..	..	..	10	9,176	16	4,278	135	35,729	56	5,680	239	56,475
Second Circle.																						
Bellary	..	..	..	..	10	5,012	15	2,780	4	32	..	..	..	..	..	..	..	..	29	7,824	60	15,353	89	23,177
Anantapur ..	..	..	5	1,300	1	2	8	630½	2	260	..	..	9	2,696	2	50	..	..	22	3,638½	49	15,553½	76	20,492
Guntur	..	..	..	..	..	..	2	4	..	..	..	..	..	..	..	..	..	..	2	4	..	..	2	4
Kurnool, East ..	3	550	1	100	1	50	2	350	..	..	..	..	2	35	6	1,225	..	..	11	1,660	9	1,846	24	4,156
Do. South ..	..	..	6	4,860	3	6,890	6	838	3	282	..	..	6	4,040	2	807	5	8,530	25	21,387	19	23,389	50	49,636
Do. West ..	1	16	..	..	..	..	2	68	..	..	..	..	..	..	..	..	2	114	4	182	12	2,152	17	2,350
Total ..	4	566	12	6,260	15	11,954	35	4,670½	9	574	..	..	17	6,771	10	2,082	7	8,644	93	34,695½	149	58,293½	258	99,815
Third Circle.																						
Cuddapah, North.	..	..	36	61,516	..	..	5	7,278	..	..	..	..	47	43,324	..	..	..	..	52	50,602	13	11,687	101	(b) 123,805
Do. South.	1	30	4	2,395	..	..	2	16,440	..	..	1	800	79	48,980	..	..	..	..	82	66,220	3	27,284	90	95,929
Do. West.	3	11	20	11,623	6	7,240	12	17,164	1	36	..	..	79	82,362	..	..	..	..	98	106,802	10	61,954	131	180,390
Nellore	..	..	.	..	5	410	6	527	..	..	..	..	3	2,272	..	..	4	1,361	18	4,570	14	548	32	5,118
Chingleput ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	300	4	300
Chittoor	6	715	22	2,590	1	3	13	1,189	2	115	..	..	87	18,733	..	..	..	..	103	20,040	63	7,383	194	30,728
Vellore, North ..	3	267	10	4,389	..	..	6	334	..	..	..	..	4	740	..	..	46	10,151	56	11,225	90	19,410	159	35,291
Total ..	13	1,023	92	82,513	12	7,653	44	42,932	3	151	1	800	299	196,411	..	..	60	11,512	409	259,459	197	128,566	711	471,561

(a) Include fires in unprotected areas as under— ACS.

Ganjam	14,670
Vizagapatam	845
Kistna	1

(b) Includes areas burnt in unprotected blocks—

North Cuddapah	13,190
Total ..	15,516

Appendix A.—Comparative statement of number and origin of fires that occurred during the calendar year 1922—*cont.*

District.	A. Fires caused by accident or through carelessness in burning fire lines.		B. Fires entering forests by crossing exterior fire lines.		C. Fires beginning inside the reserves or fire-traced areas.														Causes unknown.		Total of A, B and C and causes unknown.	
					Owing to carelessness or accident.						By intentional firing.						Total.					
					By workmen engaged in the forests or by purchasers of forest produce and by hay cutters.		By villagers, travellers, etc., passing through the forests.		By railway engines.		By lightning or by fire balloons.		In order to obtain new grass.		In order to turn out game or to reduce cover.		Maliciously fired.							
	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.	Number of fires.	Area burnt in acres.
(1)	(2)	(3)	(4)	(5)	(6	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
Fourth Circle.																								
Vellore, South ..	..	..	9	2,105	15	3,110	1	20	..	..	..	..	25	5,263	2	350	13	3,847	56	12,590	16	2,838	81	17,533
Do. West ..	..	..	7	547	..	..	1	1	..	..	..	..	2	2,800	..	..	1	1,800	4	4,601	95	20,079	106	25,227
Salem, East ..	..	..	6	2,575	..	..	7	234	..	..	..	..	13	571	..	..	22	3,177	42	3,982	69	6,956	117	13,513
Do. North ..	..	..	9	8,720	..	..	13	9,272	..	..	..	..	3	1,922	..	..	..	..	16	11,194	77	44,907	102	64,821
Do. Central ..	2	136	..	..	..	..	41	6,026	2	3	..	..	35	2,857	..	..	35	751	113	9,637	15	2,414	130	12,187
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	1,328	31	1,328
Total ..	2	136	31	13,947	15	3,110	63	15,553	2	3	..	..	78	13,413	2	350	71	9,575	231	42,004	303	78,522	567	134,609
Fifth Circle.																								
Kollegal ..	..	..	1	80	4	2,695	12	6,748	..	..	..	..	19	20,820	..	..	1	2,760	36	33,023	8	5,110	45	38,213
Coimbatore, North.	..	..	4	595	..	..	5	1,316	..	..	..	..	3	1,880	..	..	..	..	8	3,196	123	55,027	135	58,818
Do. South.	..	..	1	300	4	365	1	1,000	..	..	..	..	6	340	..	..	..	..	11	1,705	3	39	15	2,044
Madura	4	818	30	3,799	..	..	5	805	..	..	..	..	36	3,967	..	..	65	2,359	106	7,131	120	5,978	260	17,726
Tinnevelly ..	..	..	8	1,970	4	2,501	6	225	..	..	4	340	4	1,048	18	3,194	3	76	39	7,384	1	15	48	9,369
Total ..	4	818	44	6,744	12	5,561	29	10,094	..	..	4	340	68	28,055	18	3,194	69	5,195	200	52,439	255	66,169	503	126,170
Sixth Circle.																								
Mangalore, North.	..	..	2	4	..	..	5	46	..	..	..	..	..	..	6	170	..	..	11	216	..	..	13	220
Do. South.	1	3	25	969	15	148	4	398	..	..	..	..	..	.	1	75	7	252	27	873	5	365	58	2,210
Wynaad	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
Nilambur ..	2	54	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	54
Palghat	1	1	1	124	1	35	1	2	1	9	..	..	2	30	..	..	..	..	5	76	6	406	13	607
The Nilgiris ..	..	..	1	60	3	85	42	2,300	..	..	..	..	..	..	..	..	..	..	45	2,355	..	..	46	2,445
Total ..	4	58	30	1,158	19	268	52	2,746	1	9	..	..	2	30	7	245	7	252	88	3,550	11	771	133	5,537
Grand total for 1922-23.	29	5,499	255	122,791	80	30,245	325	96,571½	15	737	5	1,140	464	244,680	47	15,047	220	39,456	1,156	427,876½	971	538,001½	2,411	894,167
Grand total for 1921-22.	54	11,749	185	66,062	49	10,221	256	54,658	4	6	9	1,388	348	91,488	112	107,096	161	26,456	939	291,293	389	96,011	1,567	465,115

APPENDIX B.—Comparative statement of impounded cattle during 1922-23.

Districts.	Number of cattle impounded.		Average for three years ending 1921-22.
	1921-22.	1922-23.	
First Circle.			
Ganjam	706	999	1,125
Vizagapatam	970	1,134	857
Godavari, Upper	1,058	368	665
Do. Lower	942	941	505
Kistna	3,718	5,394	3,543
Total	7,394	8,836	6,695
Second Circle.			
Bellary	7,462	9,209	6,464
Anantapur	12,792	13,626	9,062
Guntur	13,136	17,635	16,952
Kurnool, East	3,904	6,807	5,173
Do. South	5,748	9,459	6,730
Do. West	11,201	8,323	8,322
Total	54,243	65,059	52,703
Third Circle.			
Cuddapah, North	2,752	3,932	2,164
Do. South	1,033	1,919	1,563
Do. West	6,064	8,535	7,155
Nellore	10,177	12,068	8,942
Chingleput	2,357	2,337	3,597
Chittoor	7,401	6,968	9,477
Vellore, North	7,021	8,638	6,477
Total	36,805	44,397	39,375
Fourth Circle.			
Vellore, South	6,841	5,692	7,158
Do. West	3,123	5,101	3,275
Salem, East	8,800	6,901	6,646
Do. North	867	1,659	769
Do. Central	2,616	3,570	2,412
Do. South	2,895	4,990	5,378
Total	25,142	27,913	25,588
Fifth Circle.			
Kollegal	4,539	3,998	3,621
Coimbatore, North	3,947	4,643	3,388
Do. South	732	431	540
Madura	4,876	7,799	4,635
Tinnevelly	3,037	2,898	2,438
Total	17,131	19,769	14,622
Sixth Circle.			
Mangalore, North	330	74	369
Do. South	281	1,019	425
Wynaad	86	180	51
Nilambur	Nil.	Nil.	Nil.
Palghat	465	1,674	690 *
The Nilgiris	1,009	762	536
Total	2,171	3,709	2,071
Grand total, Presidency	142,886	169,683	141,054

* The average is only for two years 1920-21 and 1921-22.

Annual Form No. 65.

Forest Department, Madras Presidency.

Area of reserved forests and reserved lands during 1922-23.

Districts.	Area of reserved forests.						Area of reserved lands.						Total area of reserved forests and reserved lands in square miles.
	Area on 1st April 1922.		Added during the year.	Excluded during the year.	Area on 31st March 1923.		Area on 1st April 1922.		Added during the year.	Excluded during the year.	Area on 31st March 1923.		
	Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.	Acres.	Equivalent in square miles	Acres.	Acres.	Acres.	Equivalent in square miles.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
First Circle.													
Ganjam	399,997	625	113	..	400,110	625	112	..	(a) 1	(b) 113	..	..	625
Vizagapatam	196,957	308	..	..	196,957	308	(c) 1,313 (d) 14	2	(e) 24	..	(c) 1,313 (d) 14 (e) 24	2	310
Godavari, Upper	374,435	585	106,911	..	531,346	830	157,833	247	..	(b)156,911 (f) 922	..	..	830
Do. Lower	303,531	474	..	..	303,531	474	7,966	12	..	..	7,966	12	486
Kistna	169,196	264	..	..	169,196	265	(d) 381	1	..	..	(d) 381	1	266
Total ..	1,444,116	2,256	157,024	..	1,601,140	2,502	167,619	262	25	157,946	9,698	15	2,517
Second Circle.													
Bellary	363,154	567	(g) 2,069	(h) 5,470	359,753	562	(l) 1,852	3	..	1,852	..	..	562
Anantapur	477,753	(i) 746	..	(h) 10,441	467,312	730	..	..	Nil.	..	..	..	730
Guntur	504,939	789	19	(h) 2,970	501,988	784	(k) 19	..	..	19	..	..	784
Kurnool, East	620,784	970	..	(h) 17	620,767	970	..	..	Nil.	..	..	..	970
Do. South	486,407	760	..	(h) 24	486,383	760	..	..	Nil.	..	..	..	760
Do. West	547,330	855	..	(h) 1,176	546,154	853	..	..	Nil.	..	..	..	853
Total ..	3,000,367	4,687	2,088	20,098	2,982,357	4,659	1,871	3	..	1,871	..	..	4,659
Third Circle.													
Cuddapah, North	381,492	596	..	..	381,492	596	70	..	361	..	431	1	597
Do. South	295,554	462	60	..	295,614	462	60	..	128	60	128	..	462
Do. West	431,218	752	..	3,609	477,609	746	..	..	..	..	..	..	746
Nellore	459,407	718	..	..	459,407	718	6,775	11	(m) 384	..	7,159	11	729
Chingleput	129,927	203	..	1,455	128,472	201	..	..	..	..	..	..	201
Chittoor	527,887	824	39	24	527,902	824	40	..	..	39	1	..	824
Vellore, North	289,888	453	70	201	289,757	453	70	..	26	70	26	..	453
Total ..	2,565,373	4,008	169	5,289	2,560,253	4,000	7,015	11	899	169	7,745	12	4,012

(a) Added by rectification.
(b) Transferred to reserved forests.
(c) Leased forests.
(d) Notified under section 26 of the Forest Act.
(e) Notified under section 4.
(f) Excluded during settlement.
(g) Includes 217 acres (enclosures in 2 reserves) added to reserve in 1913, left out to be added then in the return, are now added.
(h) Disafforested.
(i) Revised correct figure in rounding the fraction of a square mile.
(k) Revised figure as per forest settlement.
(l) Revised correct figure in rounding fraction of acre.
(m) Excess found in recomputation of acres.

Area of reserved forests and reserved lands during 1922-23—*cont.*

Districts.	Area of reserved forests.						Area of reserved lands.						Total area of reserved forests and reserved lands in square miles.
	Area on 1st April 1922.		Added during the year.	Excluded during the year.	Area on 31st March 1923.		Area on 1st April 1922.		Added during the year.	Excluded during the year.	Area on 31st March 1923.		
	Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.	Acres.	Equivalent in square miles.	Acres.	Acres.	Acres.	Equivalent in square miles.	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Fourth Circle.													
Vellore, South	308,476·20	482·00	(*b*) 44·14	(*c*) 1,504·35	307,015·99	480	(*j*) 70·06	0·109	..	(*i*) 44·12	25 94	0·039	480
Do. West	244,858·00	383 00	(*e*) 100·54	(*d*) 452·00	244,506·54	382	42·00	0·066	..	(*i*) 42·00	..	..	382
Salem, East	358,569·69	560·00	(*f*) 85·00	..	358,654·69	560	7,485·00	12· 00	(*h*) 7·09	..	7,492·09	12·000	572
Do. North	333,775·00	521·00	(*b*) 18·00	..	333,793·00	521	18·00	..	..	(*i*) 18·00	..	..	521
Do. Central	(*a*)263,764·40	412·00	..	(*g*) 1,437·00	262,327·40	410	7,884·00	12· 00	..	..	7,884·00	12·000	422
Do. South	(*a*)219,995·42	344·00	(*b*) 17·70	(*e*) 30·19	219,982·93	344	20,821·93	33· 00	(*h*) 70·16	(*i*) 17·70	20,874·14	32·610	377
Total ..	1,729,438·71	2,702·00	265·38	3,423·54	1,726,280·55	2,697	36,320·99	57·175	77·25	121·82	36,276·42	56·649 or 57 square miles.	2,754
Fifth Circle.													
Kollegal	600,212	938	(*m*) 2,957	(*n*) 542	602,627	941	..	..	..	..	..	..	941
Coimbatore, North ..	567,448	886	(*o*) 49	(*m*) 2,957 (*k*) 568	563,972	881	..	..	..	..	..	..	881
Do. South ..	290,388	454	..	..	290,388	454	..	..	..	..	..	..	454
Madura	422,349	660	..	(*l*) 18	422,331	660	..	..	..	..	..	..	660
Tinnevelly	271,872	425	..	(*k*) 630	271,242	424	1,292	2	..	..	1,292	2	426
Total ..	2,152,269	3,363	3,006	4,715	2,150,560	3,360	1,292	2	..	..	1,292	2	3,362
Sixth Circle.													
Mangalore, North	229,976	360	..	..	229,976	360	..	..	..	..	..	..	360
Do. South	280,891	439	..	(*r*) 3	280,888	439	..	..	..	..	..	..	439
Wynad	168,424	263	..	..	168,424	263	22	..	..	..	22	..	263
Nilambur	68,975	108	..	(*q*) 28	68,947	108	12,854	20	..	(*q*) 602	12,252	19	127
Palghat	168,934	264	(*q*) 8	(*p*) 103	168,839	264	..	..	..	..	..	..	264
The Nilgiris	263,808	412	..	(*t*) 49 (*p*) 203	263,556	412	52,597 (*u*) 2,868	-82 4	.. (*u*) 10	(*s*) 17 ..	52,580 2,878	82 5	499
Total ..	1,181,008	1,846	8	386	1,180,630	1,846	68,341	106	10	619	67,732	106	1,952
Grand total, Presidency ..	12,072,571·71	18,862	162,560·38	33,911·54	12,201,220·55	19,064	282,458·99	441·75	1,011·25	160,726·82	122,743·42	192	19,256

(*a*) Revised figure furnished by the District Forest Officers of Central and South Salem divisions for Elathur and Pakkirikaradu reserves, respectively.
(*b*) Areas added during the year under section 16.
(*c*) Do. disafforested during the year under section 24.
(*d*) Due to disafforestation and adopting Forest Map Officer's area.
(*e*) By adopting survey of India map area for Singaraipet reserve and addition to Varatanapalli reserve forest.
(*f*) Due to rectification of boundaries.
(*g*) By disafforestation and revised boundary notification of the reserves.
(*h*) Notified under section 4.
(*i*) Transferred to reserved forests.
(*j*) Correct figure furnished by District Forest Officer.
(*k*) Disforested.
(*l*) Handed over to the Agricultural Department.
(*m*) Transferred from Coimbatore, North, to Kollegal.
(*n*) Excluded at settlement.
(*o*) Transferred from the Nilgiris.
(*p*) Disforested.
(*q*) Correction of errors.
(*r*) Reduction due to revision of boundary.
(*s*) Excluded at settlement.
(*t*) Transferred to North Coimbatore.
(*u*) Toda Pattah lands.

Appendix to Form No. 65.

Details of classification of forests in the several districts for 1922–23.

District.	Area of reserved forests in square miles.	Details of classification in square miles.							Unclassified.
		I	II	I and II.	III	IV	V	VI	
First Circle.									
Ganjām	625	388	230	..	(a) ..	7	..	..	..
Vizagapatam ..	308	211	72	..	(a) ..	7	18	..	..
Gōdāvari, Upper ..	830	217	613	.	..	..	..	..	..
Do. Lower ..	474	84	(b) 256	..	..	(b) 134	..	..	..
Kistna	265	22	83	..	(a) ..	26	134	..	..
Total ..	2,502	922	1,254	..	..	174	152	..	..
Second Circle.									
Bellary	562	36	257	..	13	127	126	..	3
Anantapur	750	..	305	..	..	376	49	..	..
Guntūr	784	..	..	..	5	686	93	..	..
Kurnool, East ..	970	178	186	249	..	231	126	..	..
Do. South ..	760	281	287	..	..	190	2	..	..
Do. West ..	853	487	296	..	..	64	6	..	..
Total ..	4,659	982	1,331	249	18	1,674	402	..	3
Third Circle.									
Cuddapah, North ..	596	568	..	..	3	25	..	..	..
Do. South ..	462	431	2	..	..	29	..	..	..
Do. West ..	746	277	219	..	1	212	37	..	..
Nellore	718	172	164	..	4	326	52	..	..
Chingleput	201	..	40	..	..	145	16	..	..
Chittoor	824	266	331	..	1	17	209	..	..
Vellore, North ..	453	67	319	..	4	7	55	1	..
Total ..	4,000	1,781	1,075	..	13	761	369	1	..
Fourth Circle.									
Vellore, South ..	480	31	(f) 388	..	..	(e) ..	(e) and (f) 61	(g) ..	..
Do. West ..	382	23	(c) 341	..	..	(d) 3	7	(d) 8	..
Salem, East	560	316	133	..	..	50	61	..	..
Do. North ..	521	..	419	..	..	102	..	..	..
Do. Central ..	410	86	(a) 213	..	1	(b) 89	21	..	..
Do. South ..	344	(d) 210	55	..	..	..	74	5	..
Total ..	2,697	666	1,549	..	1	244	224	13	..
Fifth Circle.									
Kollegal	941	754	140	..	..	43	4	..	..
Coimbatore, North ..	881	664	172	..	..	45	..	..	..
Do. South ..	454	375	62	..	..	12	5	..	..
Madura	660	247	398	..	..	..	15	..	..
Tinnevelly	431	196	196	..	..	14	9	9	..
Total ..	3,360	2,236	963	..	..	114	53	9	.
Sixth Circle.									
Mangalore, North ..	360	276	35	..	1	48	..	..	..
Do. South ..	439	254	67	..	..	118	..	.	..
Wynaad	263	226	37	..	..	..	..	..	..
Nilambur	108	100	8	..	..	..	..	..	..
Palghat	(a) 264	141	82	..	..	24	7	..	..
The Nilgiris	(b) 412	337	57	..	4	12	..	..	..
Total ..	1,846	1,334	286	..	5	202	7	..	..
Grand total, Presidency.	19,064	7,921	6,463	249	37	3,169	1,187	23	3

Note for First Circle.
(a) Less than half a square mile.
(b) 100 square miles, consisting of Coringa and its extension and Kandikuppa, have been shown under II although they are classed under "II and IV."

Note for Fourth Circle.
(a) Area corrected in Kurumbapatti reserved forest and due to disafforestation.
(b) Area corrected in Masakkal and Kalappambadi reserved forests due to disafforestation.
(c) Due to disafforestation.
(d) Due to transfer of Pinjur B Block to Class IV (three square miles) from Class VI.
(e) Due to transfer of Attipakkam reserved forest (part) four square miles to Class V.
(f) Four square miles of Class V reserves was wrongly added to Class II last year.
(g) Due to disafforestation of 2 square miles (Kappalur reserved forest).

Note for Sixth Circle.
(a) Five reserves with an area of 10 square miles have not yet been classified.
(b) Two square miles of forests in scattered bits not classified.

ANNUAL FORM No. 66.

Forest Department, Madras Presidency.

Progress made in forest settlements during the year 1922–23.

Forest district.	Name of forest.	Area in square miles.			Cost during the year.		Entire cost per square mile of area finally settled.	Government notification of settlement.	
		Finally settled during the year.	In hand at the commencement of the year.	Taken in hand during the year.	In forest accounts.	In other accounts.		Number.	Date.
	First Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	RS.				
Ganjam ..	Chendragiri extension (Kutnikuppa bit A/2).	0·105 (a) 0·002	..	..	..	..	..	85	8th Mar. 1922.
	Addition to Dowgam ..	0·071	..		..	..	..	319	26th Oct. 1922.
Vizagapatam ..	Chinnagora extension block VI.	..	..	0·038	..	..	..	..	..
Godavari, Upper.	Nugur	245·173 (b) 1·437	..	..	..	..	..	71	15th Feb. 1922.
Godavari, Lower.	Birampalli	..	2·804	..	..	..	..	..	..
	Vemulakonda	..	5·244	..	..	..	..	..	..
	Palam	..	2·083	..	..	..	..	..	..
	Nurupudi	..	2·315	..	..	..	..	..	..
	Total ..	246·788	12·446	0·038	..	..	..	..	..
	Second Circle.								
Bellary ..	Daroji foreshore reserve .	2·89	..	..	..	..	..	G.O. Mis. 716, Dev.	17th May 1922. (Chief Conservator's Proceedings Mis. No. 236, dated 23rd May 1922.)
Guntur ..	Muttukur extension No. 4 ..	* 0·029	..	..	..	..	..	G.O. Mis. 1399, Dev.	23rd Oct. 1922. (Chief Conservator's Proceedings Mis. No. 506, dated 31st Oct. 1922.)
	Total ..	2·919	..	..	..	..	..	..	..
	Third Circle.								
Cuddapah, North.	Dasaripalli extension	..	0·10	0·57	4	..	..	..	..
Cuddapah, South.	Kodivengammabhavi R.F. ..	0·547	..	..	..	..	..	288	22nd Sep. 1923.
	Rollamadugu-Seshachalam R.F.	0·038	..	..	5	..	..	100	27th Mar. 1922.
	Do.	..	..	0·01	..	..	..	..	..
	Buduguntapalli R.F.	..	..	0·002	..	..	..	..	..
	Do. extension ..	..	..	0·004	..	..	..	..	..
	Seshachalam R.F. extension.	..	..	0·004	..	..	..	..	..
	Salivendla R.F.	..	..	0·1	..	..	..	..	..
	Chitvel R.F. extension ..	..	..	0·06	..	..	..	..	..
Cuddapah, West.	....	..	..	..	(c) 2,230	..	..	..	..
Nellore ..	Compartment No. 29 of Rapur Veligondas.	..	(d) 11·18	..	(e)—736	..	..	..	..
Chittoor ..	Addition to Tarigonda R.F. ..	0·02	..	..	..	..	..	317	27th Oct. 1922.
	Extension and addition to Venkatagirikota plantation.	0·001	..	..	..	..	..	59	20th Feb. 1923.
	Extension to Melmoyi R.F. ..	0·04	..	..	..	..	..	198	28th June 1922.
	Addition to Peddur extension R.F.	0·003	..	..	..	..	..	174	9th June 1922.
	Extension to Musalimadugu extension.	..	(f) 0·603	..	..	..	..	..	..
	Addition to Musalimadugu extension.	..	0·001	..	(g) 22	..	..	..	..
Vellore, North.	Block No. 72, Arasampattu ..	0·01	..	..	47	..	..	184	19th June 1922.
	Block No. 94, Karapattu ..	0·10	..	..	..	..	..	350	7th Dec. 1922.
	Shanankuppam	..	..	0·020	..	..	..	..	..
	Ambur	..	..	0 010	..	..	..	..	..
	Kaniyambadi	..	..	0·006	..	..	..	..	..
	Total ..	0·759	11·284	0·786	1,572	..	..	..	..

(a) Added by rectification. (b) Excluded at settlement.
(c) Paid to shrotriyamdar of Putlampalli under High Court decree for the acquisition of shrotriyam forests in the Palkondas.
(d) Revised figure. (e) Accountant-General's alteration. (f) Given up. (g) For acquisition of a site.
* The area originally notified under section 4 was ·05 square mile which was subsequently found to be incorrect. The correct area as per Settlement Officer's notification under section 16 is ·029 square mile.

Progress made in forest settlements during the year 1922-23—*cont.*

Forest district.	Name of forest.	Area in square miles.			Cost during the year.		Entire cost per square mile of area finally settled.	Government notification of settlement.	
		Finally settled during the year.	In hand at the commencement of the year.	Taken in hand during the year.	In forest accounts.	In other accounts.		Number.	Date.
	Fourth Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	RS.				
Vellore, South.	Mulakad reserve additions ..	..	0·0405	..	..	..	..	91	14th Mar. 1922.
	Eraiyurmalai reserve additions	0·0072	0·0072	..	..	..	..	498	4th Apr 1922.
	Nattampalli do.	0·0092	0·0092	..	..	..	..	148	9th May 1922.
	Penugolathur Swamimalai reserve addition.	0·0524	0·0524	..	..	..	..		
Vellore, West.	Varatanapalli extension ..	0·0700	..	..	..	..	..	1235	15th Sep. 1922.
Salem, East.	Arana and Tirthagiri	..	5·92	..	..	..	..	..	..
	Pallipatti extension	..	5·77	..	..	..	..	..	..
	Mannur reserve addition ..	..	..	(*a*)0·004	..	..	..	G.O. Mis. 182, Dev.	3rd Feb. 1922.
	Swamimalai reserve addition (2nd bit).	..	..	(*a*)0·007	..	..	..	G.O. Mis. 133, Dev.	27th Jan. 1922.
Salem, Central.	Jarugumalai reserve	..	11·94	..	..	..	..	..	..
	Kanjeri reserve extension ..	..	0·38	..	..	..	..	..	..
Salem, North.	Pennagaram reserve extension.	0·0280	..	..	..	..	..	Mis. 241	15th Feb. 1922.
Salem, South.	Paithur reserve	..	20·63	..	..	..	..	..	..
	Veppadi reserve	..	5·38	..	..	..	..	..	..
	Atturmanmalai	..	6·49	..	..	..	..	..	..
	Shemmalai addition	0·0300	0·0300	..	..	..	..	221	13th July 1922.
	Seekamkaradu addition ..	..	..	0·020	..	..	..	78	21st Feb. 1922.
	Pakkirikaradu addition ..	..	..	0·003	..	..	..	183	15th May 1922.
	Karavallikombai reserve addition.	..	..	0·030	..	..	..	352	9th Dec. 1922.
	Jamputtu reserve addition ..	..	..	0·003	..	..	..		
	Shelur do. ..	..	..	0·060	..	..	..		
	Total ..	0·1968	56·6493	0·127	..	..	..	..	..
	Fifth Circle.								
Tinnevelly.	Karumandiamman Shola estate.	..	0·15	..	418	..	..	..	..
	Mulakadu block	..	1·48	..	..	..	..	..	..
	Hare Island for Tuticorin harbour.	..	0·22	..	..	..	..	..	..
	Punayadi Island for Tuticorin harbour.	..	0·16	..	..	..	..	..	..
	Total ..	..	2·01	..	418	..	..	..	..
	Sixth Circle.								
The Nilgiris.	Mudumalai	..	74·69	..	..	..	..	..	..
	Addition to Kalhatti	..	0·17	..	..	..	..	..	..
	Do. to Wenlock downs.	..	(*b*) 0·03	..	..	..	..	..	..
	Do. to Nedugula ..	..	0·06	..	..	..	..	..	..
	Do. to Nadukadahulla.	..	0·27	..	..	..	..	..	..
	Do. to Attukkadu shola.	..	0·05	..	..	..	..	..	..
	Do. to Doddakavu ..	..	0 08	..	..	..	..	..	..
	Do. to No. III to Kodanad valley shola.	..	0·13	..	..	..	..	..	.
	Addition to Madanad	..	0·16	..	..	..	..	..	..
	Do. to Segur ..	..	4·69	..	..	..	..	..	..
	Total ..	..	80·30	..	..	..	..	..	..
	Grand total, Presidency ..	250·6628	162·6893	0·951	1,990	..	..	..	..

(*a*) Omitted to be shown in last year's return. (*b*) Excluded at settlement and the balance left is only half an acre.

ANNUAL FORM No. 67.

Forest Department, Madras Presidency.

Record of demarcation and maintenance of boundaries during 1922–23.

District.	Length of boundaries artificially demarcated during the year.	Length of previously existing boundaries repaired.	Length of previously existing boundaries not repaired.	Total length of artificially marked boundaries at the close of the year.	Length of boundaries still to be demarcated at the close of the year.	Length of natural boundaries not requiring artificial marks.	Total length of boundaries at the close of the year.	Expenditure on demarcation during the year.	
								On new work.	On repairs.
First Circle.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	RS.	RS.
Ganjam	..	6 (*a*) 1,369	..	1,375	..	80	1,455	..	58
Vizagapatam ..	..	(*a*) 564	..	564	..	19	583	..	..
Gōdāvari, Upper ..	28	(*b*) 484 (*b*) (*c*) 95	..	607	3	151	761	661	(*d*) 673
Do. Lower ..	..	2 (*a*) 736	..	738	..	71	809	..	15 (*d*) 96
Kistna	..	11 (*a*) 417	119	547	..	40	587	..	240
Total ..	28	19 (*a*) 3,086 (*b*) 484 (*b*) (*c*) 95	119	3,831	3	361	4,195	661	313 (*d*) 769
Second Circle.									
Bellary	..	(*d*) 1,460	..	(*a*) 1,460	..	..	(*a*) 1,460	(*b*) 26	(*c*) 36
Anantapur	..	(*d*) 1,700 (*e*) 13	..	(*a*) 1,713	..	34	(*a*) 1,747	..	511
Guntūr	..	(*d*) 30	1,199	(*a*) 1,229	..	..	(*a*) 1,229	..	(*g*) 23
Kurnool, East ..	0-4 f.	(*d*) 435 (*e*) 65½ (*f*) 15	96	612	..	48	660	14	200
Do. South ..	..	(*d*) 602 (*e*) 2	28	632	..	5	637	..	15
Do. West ..	..	(*d*) 748 (*e*) 5	157	(*a*) 910	..	100	(*a*) 1,010	..	136
Total ..	½	5,075½	1,480	6,556	..	187	6,743	40	921
Third Circle.									
Cuddapah, North ..	..	(*a*) 216	344	560	..	13	573	..	..
Do. South ..	..	(*a*) 215	111	326	..	40	366	(*c*) 42	..
Do. West ..	1	(*a*) 451 45 (*b*) —15	903	1,385	..	22	1,407	70	283
Nellore	..	(*a*) 1,638 29	291	1,958	4	84	2,046	..	960
Chingleput	24	(*a*) 678 12	164	878	..	..	878	1,105	332
Chittoor	..	(*a*) 1,115 60	271	1,446	..	60	1,506	..	2,207
Vellore, North ..	..	(*a*) 1,048 (*b*) — 5	..	1,043	..	11	1,054	..	15
Total ..	25	5,487	2,084	7,596	4	230	7,830	1,217	3,747

Note for First Circle.
- (*a*) Cleared by subordinates free of cost.
- (*b*) Cleared by hill tribes for fire protection, the cost being debited to B VIII (*f*).
- (*c*) Existing boundary of the Nugur block already demarcated added.
- (*d*) Cost of works other than boundaries of forests finally notified.

Note for Second Circle.
- (*a*) Difference is due to exclusion of areas disforested.
- (*b*) Represents amount charged in current year's accounts for work done and shown in previous year's accounts.
- (*c*) Charges incurred on clearing certain interior lines.
- (*d*) Cleared by subordinates free of cost.
- (*e*) Cleared at Government cost.
- (*f*) Cleared by Panchayatdars.
- (*g*) Cost of constructing and repairing of cairns.

Note for Third Circle.
- (*a*) Cleared by subordinates free of cost.
- (*b*) Deduction owing to disafforestation.
- (*c*) Preliminary demarcation of Kothur block since given up.

Record of demarcation and maintenance of boundaries during 1922-23—*cont.*

District.	Length of boundaries artificially demarcated during the year.	Length of previously existing boundaries repaired.	Length of previously existing boundaries not repaired.	Total length of artificially marked boundaries at the close of the year.	Length of boundaries still to be demarcated at the close of the year.	Length of natural boundaries not requiring artificial marks.	Total length of boundaries at the close of the year.	Expenditure on demarcation during the year.	
								On new work.	On repairs.
Fourth Circle.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	MILES.	RS.	RS.
Vellore, South ..	..	915	..	915	..	15	930	..	32
Do. West ..	..	589	40	629	..	13	642	(*a*) 7	233
Salem, East	1	1,167	..	1,168	..	4	1,172	14	816
Do. North ..	..	426	58	484	..	116	600	(*b*) 19	..
Do. Central ..	..	648	36	684	..	15	699	(*c*) 65	513
Do. South ..	10	987	..	997	57	..	1,054	79	325
Total ..	11	4,732	134	4,877	57	163	5,097	184	1,919
Fifth Circle.									
Kollegal	3	4	..	299	144	152	595	322	81
		(*a*) 292							
Coimbatore, North ..	5	(*a*) 582	..	585	170	106	861	116	..
		(*b*) — 2							
Do. South ..	..	3	..	228	..	72	300	..	94
		(*a*) 225							
Madura	2	(*a*) 1,002	322	1,326	240	171	1,737	508	..
Tinnevelly	..	(*a*) 267	181	444	..	34	478	..	..
			(*b*) —4						
Total ..	10	2,373	499	2,832	554	535	3,971	946	175
Sixth Circle.									
Mangalore, North ..	..	..	(*b*) 1,228	1,228	..	103	1,331	..	..
Do. South ..	..	..	(*b*) 1,135	1,135	(*d*) ..	101	1,236	..	17
Wynaad	10	17	(*b*) 1,151	1,178	30	36	1,244	229	117
Nilambur	.	(*a*) 95	..	95	20	55	170	..	..
The Nilgiris	..	(*c*) 172	1,339	1,511	..	299	1,810	..	220
Palghat	..	..	(*b*) 299	299	16	39	(*e*) 354	..	..
Total ..	10	284	5,152	5,446	66	633	6,145	229	354
Grand total, Presidency.	84½	21,635½	9,468	31,188	684	2,109	33,981	3,277	8,198

Note for Fourth Circle.
- (*a*) Cost incurred on cutting lines in connexion with the disafforestation of a portion of Nallapattu reserved forest.
- (*b*) Rs. 19 spent in demarcation of Pane reserve for leasing out a portion.
- (*c*) Represents the cost of cutting new lines on account of exclusion of portions of Manjavadi ghat, Kurumbapatti and Kanjeri reserves.

Note for Fifth Circle.
- (*a*) Cleared by subordinate free of cost.
- (*b*) Due to disafforestations.

Note for Sixth Circle.
- * Less than a mile.
- (*a*) Cost of line-clearing charged to fire-tracing operations.
- (*b*) Usual line-clearing done by subordinates.
- (*c*) Includes 135 miles cleared by subordinates.
- (*d*) 46 miles shown in the last return deleted as it is now found that there is no undemarcated area in the district.
- (*e*) Decrease due to disafforestation of reserves.

Annual Form No. 69.

Forest Department, Madras Presidency.

Progress made in working plans during 1922–23.

District.	Areas for which working plans have been completed and approved by the Chief Conservator.		Areas for which working plans are being compiled or have been compiled but not sanctioned.		Areas for which working plans have still to be taken in hand.	Areas for which working plans are not at present required.	Total forest area as per Form No. 65.
	At commencement of the year.	During the year.	At commencement of the year.	Taken in hand during the year.			
			Reserved forests.				
First Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Ganjām	625	..	..	..	..	..	625
Vizagapatam ..	186	..	..	104	..	18	308
Gōdāvari, Upper ..	..	..	..	..	830	..	830
Do. Lower ..	292	21	..	..	107	54	474
Kistna	240	..	..	..	..	25	265
Total ..	1,343	21	..	104	937	97	2,502
			Reserved lands.				
Vizagapatam ..	..	..	..	..	..	2	2
Gōdāvari, Lower ..	..	..	..	..	12	..	12
Kistna	..	..	..	..	..	1	1
Total ..	..	..		..	12	3	15
			Reserved forests				
Second Circle.							
Bellary	..	..	..	2	(*a*) 480	80	562
Anantapur ..	315 (*b*)	..	..	117	298	..	730
Guntūr	(*c*)	..	255 (*c*)	..	526	3	784
Kurnool, East ..	..	..	176 (*d*)	..	761	33	970
Do. South ..	..	..	..	196	564	..	760
Do. West ..	299 (*e*) / 13 (*f*)	..	..	167	..	377	853
Total ..	624	..	431	482	2,629	493	4,659
Third Circle.							
Cuddapah, North.	38 / — 4 (*a*) / + 2 (*c*)	..	17	..	534	10	597
Do. South ..	96	..	..	..	..	366	462
Do. West.	35 / + 1 (*d*)	17	27	..	..	666	746
Nellore ..	95	..	38	69	28	499	729
Chingleput ..	184 / — 2 (*b*) / + 19 (*d*)	..	..	..	..	..	201
Chittoor	33	..	88	7	696	..	824
Vellore, North ..	404 / + 11 (*d*)	6 (*c*)	..	..	..	32	453
Total ..	912	23	170	76	1,258	1,573	4,012

Reserved lands—Nil.

Reserved forests.

District.	Regular working plans.	Schemes.	Revised or new working plans.	Revised or new schemes.	Existing working plans.	New working plans or scheme.	Existing working plans.	New working plans or schemes.			
Fourth Circle.											
Vellore, South .	415	..	..	..	*127	..	..	..	(*a*) 65	..	(*a*) 480
Do. West .	(*a*) 381	..	..	..	..	..	*369	..	..	1	382
Salem, East ..	334	..	..	..	*15	†74	..	..	..	(*b*) 152	560
Do. North ..	96	..	..	..	..	216	..	..	209	..	521
Do. Central .	(*a*) 262	..	..	..	..	*17	*126	..	(*a*) 112	..	(*a*) 410
Do. South ..	(*c*) 153	*4	..	72	..	36					
	..	*3			..	2	*4	..	46	42	344
	..	‡ 11	..	*53		26					
	..	3									
Total ..	1,641	3	..	72	..	354	..	..	432	195	2,697
Grand total ..	1,644		72		354		..				

Note for Second Circle.—The figures in the return are the revised ones with reference to Chief Conservator's instructions issued in paragraph 7 of Proceedings Forest No. 39, dated 17th September 1921, to which attention was drawn in Proceedings Rt. No. 1258, dated 25th September 1922.

(*a*) Includes 86·80 square miles of lapsed tentative working plan of Harpanahalli Range and 1·90 square miles of temporary working scheme of Kudligi Range also expired and 50 square miles of Adoni Range the temporary plan which have been cancelled.

(*b*) Revised figure due to removal of 117 squares miles of Gooty Range, Working plan under revision to column 5 and to the disforestation of 17 square miles.

(*c*) Revised figure due to the removal of 20 square miles of plan from column 2 to column 4 owing to cancellation of the plan and so disforestation of 2 miles.

(*d*) Includes 6 48 square miles under working scheme sanctioned by Conservator.

(*e*) Sanctioned by Board.

(*f*) Working scheme sanctioned by Conservator.

Note for Third Circle.

(*a*) Area abandoned owing to reduction in acreage.

(*b*) Disafforested.

(*c*) Temporary working schemes.

(*d*) Temporary working schemes not included in previous years' returns.

Sanctioned by Board and Chief Conservator.

	SQ. MLS.
(1) Existing regular working plans in force requiring no revision	423
(2) Existing regular temporary working schemes requiring no revision	33
(3) Existing regular working plans and temporary schemes requiring revision	456

Progress made in working plans during 1922-23—*cont.*

District.	Areas for which working plans have been completed and approved by the Chief Conservator.		Areas for which working plans are being compiled or have been compiled but not sanctioned.		Areas for which working-plans have still to be taken in hand.	Areas for which working plans are not at present required.	Total forest area as per Form No. 65.
	At commencement of the year.	During the year.	At commencement of the year.	Taken in hand during the year.			
			Reserved forests.				
Fifth Circle.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Kollegal ..	(*a*) 3	(*b*) 140	..	29	81	688	941
Coimbatore, North.	(*a*) 56 (*b*) 25 (*c*) 242	(*b*) 10	..	..	257	291	881
Coimbatore, South.	(*a*) 8 (*b*) 12	(*a*) 45	..	..	25	337	427
Madura	(*a*) 351	..	15	..	279	15	660
Tinnevelly ..	(*a*) 52 (*d*) — 1 (*e*) 151	..	..	(*f*) 55	..	137	424
Total ..	929	195	15	84	642	1,468	3,333
			Reserved lands.				
Tinnevelly ..	..	..	..	..	..	2	2
			Leased forests.				
Coimbatore, South.	(*a*) 20	..	..	..	..	7	27
Grand total ..	949	195	15	84	642	1,477	3,362
			Reserved forests.				
Sixth Circle.							
Mangalore, North.	..	..	..	(*b*) 25	(*a*) 330	5	360
Do. South.	3	..	..	..	(*a*) 436	..	439
Wynaad	..	..	..	..	(*a*) 178 22	63	263
Nilambur	(*c*) 12	(*d*) 96	..	..	..	..	108
The Nilgiris ..	63	..	..	(*b*) 2	..	347	412
Palghat	27 (*e*) 45	..	..	..	98	94	264
Total ..	105 45	96	..	27	944 120	509	1,846
			Reserved lands.				
The Nilgiris ..	75	..	..	..	5	6	(*f*) 86
			Leased forests.				
Nilambur	19	..	..	..	..	..	19
Total ..	244	96	..	27	1,070	515	1,952
Grand total, Presidency.	5,716	497	970	773	6,980	4,353	(*g*) 19,199

(*a*) Included in column II.

Note for Fourth Circle.—As compared with last year figures, the variation is due to—

(*a*) Disafforestation of certain areas or rectification of reserve boundaries.

(*b*) The addition of 47 square miles coming under the Kallakurichi Range—5 years' scheme cancelled in Chief Conservator's Proceedings Mis. No. 211, dated 11th May 1922.

(*c*) The addition of 19 square miles covered by the Udaiyarpalaiyam working plan wrongly shown under 'schemes' in column 3 of last year's return.

* These figures are excluded in vertical totals as they are included in the respective figures in sub-column 1 of column 2.

† Of this 10 square miles are also worked for sandal under working plan sanctioned in B.P. Forest Mis. No. 170, dated 6th May 1918.

‡ This figure representing portion of bamboo scheme is omitted in vertical total as it is included in the manure leaf scheme indicated by figures in the sub-columns of columns 3 and 4.

West Vellore.—Figures '213' noted in column 4 of last year return is now merged in the revised working plan for the whole division noted by figure '369' which excludes 12 square miles of reserves coming under classes V and VI.

Salem, East.—Figure '12' noted in column 3 of last year's return is now omitted, being included in the figure noted in column 2.

Note for Fifth Circle.

(*a*) Areas of regular working plans which are in force.

(*b*) Areas of temporary working schemes.

(*c*) Area of lapsed working plans, worked however for extraction of dead and spiked sandal trees on a temporary scheme.

(*d*) Disforested.

(*e*) No working is carried on in these areas except removal of minor forest produce and grazing.

(*f*) Included in the fresh working plan for 287 square miles prepared during the year.

Note for Sixth Circle.

(*a*) Sanctioned working plans expired or are not in force and requiring revision.

(*b*) Working schemes approved by Conservator.

(*c*) Includes four square miles transferred from leased forests.

(*d*) Nilambur valley working plan.

(*e*) Working scheme.

(*f*) Includes Toda Patta lands four square miles.

(*g*) This figure excludes 57 square miles of reserved lands in the Fourth Circle.

Annual Form No. 70.

Forest Department, Madras Presidency.

Communications and Buildings during 1922-23.

District.	Roads (including bridle-paths and culverts).				Buildings.		Other works.	
	New works.		Repairs.		Cost of new works.	Cost of repairs.	Cost of new works.	Cost of repairs.
	Length.	Cost.	Length.	Cost.				
First Circle.	M. F. CH.	Rs.	M. F. CH.	Rs.	Rs.	Rs.	Rs.	Rs.
Ganjam	5 5 0	614	5 6 0	1,028	5,331	3,766 (a) 1,275	..	83
Vizagapatam	4 7 0	209	13 6 0	405	50	1,390 (a) 305	331	..
Godavari, Upper ..	2 3 0	717	..	117	3,641	1,270 (a) 571	197	63
Do. Lower ..	7 4 7	1,149	56 4 0	1,702	508	1,982 (a) 491	..	136
Kistna	..	..	11 0 0	515	995	90	..	40
Total ..	20 3 7	2,689	87 0 0	3,767	10,525	8,498 (a) 2,642	528	322
Second Circle.								
Bellary	..	..	..	..	1,129	(a) 204 (b) 669	..	..
Anantapur	..	..	2 6 0	153	..	(a) 528 (b) 1,795	..	21
Guntur	3 0 0	46	2 0 0	350	3,912	(a) 1,154 (b) 1,020	280	20
Kurnool, East	10 1 0	3,243	31 2 0	1,883	1,752	(a) 943 (b) 780	620	86
Do. South	..	..	58 0 0	3,896	3,713	(a) 2,056 (b) 384	..	105
Do. West	22 0 0	299	34 1½ 0	9,887	50	(a) 816 (b) 983	158	15
Total ..	35 1 0	3,588	128 1½ 0	16,169	10,556	11,332	1,058	247
Third Circle.								
Cuddapah, North ..	..	..	28 7 3	554	1,494	1,658 (a) 656	..	40
Do. South ..	12 0 0	5,208	14 7 0	1,384	7,180	1,003 (a) 360	163	307
Do. West ..	0 6 3	1,201	8 0 0	405	..	827 (a) 1,201	..	48
Nellore	..	..	..	..	4,228	805 (a) 1,366	..	77
Chingleput	..	..	27 6 3	1,325	148	839 (a) 998	..	136
Chittoor	0 1 0	29	26 5 0	2,442	1,943	3,835 (a) 1,171	1,474	42
Vellore, North	3 0 0	7	18 7 0	1,537	615	654 (a) 500	..	15
Total ..	15 7 3	6,445	125 0 6	7,647	15,608	9,621 (a) 6,252	1,637	665

Note for First Circle. (a) Cost of establishment.

Note for Second Circle. (a) Represents cost of repairs to buildings.
(b) Represents cost of establishment over the buildings.

Note for Third Circle.—(a) Cost of establishment.

Communications and Buildings during 1922–23—*cont.*

District.	Roads (including bridle-paths and culverts).				Buildings.		Other works.	
	New works.		Repairs.		Cost of new works.	Cost of repairs.	Cost of new works.	Cost of repairs.
	Length.	Cost.	Length.	Cost.				
Fourth Circle.	M. F. CH.	RS.	M. F. CH.	RS.	RS.	RS.	RS.	RS.
Vellore, South	..	..	12 6 0	1,321	451	3,113 — 2	..	453 + 2
Do. West	..	..	22 2 0	2,686	1,000	1,038	313 + 1	..
Salem, East	..	..	18 4 0	1,381	..	2,575	..	..
Do. North	..	..	39 2 0	1,320	58	978 + 1	..	130 + 1
Do. Central	..	..	19 4 0	577	..	1,489 + 10	..	71 — 10
Do. South	1 6 0	712	64 0 0	1,459	1,008	1,989	..	26 — 1
Forest Engineer	12 2 0	50,580	7 0 0	6,904 + 445	..	..	..	..
Total	14 0 0	51,292	183 2 0	16,093	2,517	11,191	314	672
Fifth Circle.								
Kollegal	..	(*b*) 204	47 1 0	500	2,416	(*a*) .. 273	1,554	..
Coimbatore, North	..	..	88 0 0	2,344	..	1,370 (*a*) 377	97	54
Do. South	1 6 0	4,449	21 0 0	9,174 (*a*) 570	6,348	728 (*a*) 325	72	27
Madura	6 0 0	1,537	230 0 0	11,632 (*a*) 215 (*h*) —290	187	1,341 (*a*) 1,062	163	126
Tinnevelly	1 5 0	1,027	7 4 0	1,748	..	372 (*a*) 571	..	2
Forest Engineer	6 3 0 3 6 0	(*c*) 44,241 (*d*) 195	..	..	..	..	..	..
Direction	(*f*) 48 0 0	(*e*) 444						
Total	97 4 0	701	10 0 0	85	(*g*) 6,185	..	..	..
		52,798	403 5 0	25,978	15,136	6,419	1,886	209
Sixth Circle.								
Mangalore, North	(*a*) ..	807	16 5 0	742	1,487	380 (*b*) 220	2,535	30
Do. South	1 5 0 (*d*)13 0 0	707	18 1 0	346	587	873	382	26
Wynaad	7 2 0 (*d*)10 0 0	(*c*) 12,091	129 0 0	1,961	642	1,134 (*b*) 268	..	10
Nilambur	..	..	23 5 0	3,227	(*h*)19,177	674	318	192
The Nilgiris	1 0 0	412	66 0 0	10,644	2,804 (*e*) 5,183	2,255 (*e*)1 740	60	767
Palghat Exploitation—Chenat Nair Forest Research officer	(*d*)18 4 0	(*f*) 6,826	(*g*)61 4 0	8,930	12,780	3,081 (*b*) 266 23	595	213
	..	..	..	..	..	..	..	..
Total	51 3 0	20,843	314 7 0	25,850	42,660	9,914	3,890	1,238
Grand total, Presidency	204 3 0	1,37,655	1,241 7½ 6	95,504	97,002	65,869	9,513	3,353

Note for Fourth Circle.
Note.—The amounts shown in column 7 include cost of establishments.
\+ Added to agree with the Accountant-General's figures.
— Deducted do. do. do.

Note for Fifth Circle.
(*a*) Cost of establishment.
(*b*) Expenditure on the construction of a girder bridge on the Gundal Valley road.
(*c*) Expenditure on the construction of Mount Stuart Ghat road.
(*d*) Relates to the investigation of the branch road from Topslip to Mount Stuart.
(*e*) Contingent charges relating to (*c*) and (*d*).
(*f*) Alignment of 28 miles 4 furlongs and re-clearing 19 miles 4 furlongs of inspection paths in Kodamadi and Kannikatty ranges in the Tinnevelly district.
(*g*) Includes Rs. 52 debited to A VII (*c*).
(*h*) Difference between Accountant-General's and District Forest Officer's figures.

Note for Sixth Circle.
(*a*) Completion of road three miles six furlongs shown in previous years.
(*b*) Cost of establishment.
(*c*) Mainly cost of metal collected for metalling over seven miles two furlongs of existing road from Chedleth to Sultan's battery.
(*d*) Inspection paths.
(*e*) Cost of wooden huts at Bandyshola under construction for Madras Forest College Camp.
(*e*)1 Painting Madras Forest College huts at Aramby.
(*f*) Includes Rs. 4,097 paid for land acquisition for Dhoni-Olavakot road.
(*g*) Includes inspection path forty-one miles.
(*h*) Mainly cost of re-construction of buildings damaged in the Mappilla rebellion.

ANNUAL FORM No. 71.

Forest Department, Madras Presidency.

Register of breaches of Forest Rules during 1922-23.

District.		Cases pending from 1921-22.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.
			Injury to forest by fire.	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
									Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
First Circle.															
Ganjām ..	A ..	43	1	35	4	5	45	88	31	107	43	214	74	321	14
	B ..	58	1	417	23	20	461	519	382	1,474	31	149	413	1,623	106
	C ..	..	55	44	..	..	99	..	..	..	..	..	..	..	..
Total	..	101	57	496	27	25	605	607	413	1,581	74	363	487	1,944	120
Vizagapatam.	A ..	45	..	45	6	1	52	97	88	213	3	5	91	218	6
	B ..	32	1	247	32	22	302	334	267	870	30	150	297	1,020	37
	C ..	..	28	2	..	..	30	..	..	..	..	..	..	..	..
Total	..	77	29	294	38	23	384	431	355	1,083	33	155	388	1,238	43
Gōdāvari, Upper.	A ..	4	..	15	..	..	15	19	8	21	..	..	8	21	11
	B ..	5	1	71	15	2	89	94	79	148	7	15	86	163	8
	C ..	..	21	..	..	..	21	..	..	..	..	..	..	..	..
Total	..	9	22	86	15	2	125	113	87	169	7	15	94	184	19
Gōdāvari, Lower.	A ..	20	..	111	2	2	115	135	105	83	9	30	114	113	21
	B ..	43	1	380	56	21	458	501	433	752	5	27	438	779	63
	C ..	..	..	10	1	1	12	..	..	..	..	..	..	..	..
Total	..	63	1	501	59	24	585	636	538	835	14	57	552	892	84
Kistna	A ..	98	..	69	12	3	84	182	144	309	25	44	169	353	13
	B ..	55	..	386	251	13	650	705	528	1,456	66	128	594	1,584	111
	C ..	..	8	5	..	..	13	..	..	..	..	..	..	..	..
Total	..	153	8	460	263	16	747	887	672	1,765	91	172	763	1,937	124
Total, First Circle.	A ..	210	1	275	24	11	311	521	376	733	80	293	456	1,026	65
	B ..	193	4	1,501	377	78	1,960	2,153	1,689	4,700	139	469	1,828	5,169	325
	C ..	..	112	61	1	1	175	..	..	..	..	..	..	..	..
Grand total, First Circle.		403	117	1,837	402	90	2,446	2,674	2,065	5,433	219	762	2,284	6,195	390
Second Circle.															
Bellary ..	A ..	41	..	56	43	2	101	142	124	458	5	42	129	500	13
	B ..	68	..	318	299	16	633	701	537	1,186	44	145	581	1,331	120
	C ..	..	89	3	4	2	98	..	..	..	..	..	..	..	..
Total	..	109	89	377	346	20	832	843	661	1,644	49	187	710	1,831	133
Anantapur.	A ..	104	..	165	75	14	264	368	269	682	28	121	297	803	61
	B ..	63	..	454	262	28	744	807	652	1,317	73	276	725	1,593	82
	C ..	..	76	29	2	..	107	..	..	..	..	..	..	..	..
Total	..	167	76	648	339	42	1,105	1,165	921	1,999	101	397	1,022	2,396	143
Guntūr ..	A ..	129	..	43	44	5	92	221	161	390	2	8	163	398	58
	B ..	155	..	586	319	52	957	1,112	765	2,011	64	362	829	2,373	283
	C .	.	..	15	..	1	16	..	..	..	..	..	..	..	..
Total	..	284	..	644	363	58	1,065	1,333	926	2,401	66	370	992	2,771	341

A = Cases taken to Court. B = Cases compounded. C = Cases undetected.

NOTE.—The variations between the closing balance of last year and these figures are due to transfers from B to A.

Register of breaches of Forest Rules during 1922-23—*cont.*

District.		Cases pending from 1921-22.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.
			Injury to forest by fire.	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
									Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Second Circle—cont.															
Kurnool, East.	A ..	57	1	84	32	6	123	180	154	556	9	86	163	642	17
	B ..	90	..	227	86	18	331	421	359	854	33	148	392	1,002	29
	C ..	..	22	1	..	..	23	...	..	..	..	..	..	..	..
Total	..	147	23	312	118	24	477	601	513	1,410	42	234	555	1,644	46
Kurnool, South.	A ..	24	..	106	42	1	149	173	132	390	3	40	135	430	38
	B ..	40	..	210	108	6	324	364	229	570	53	132	282	702	82
	C ..	..	..	39	1	..	40	..	..	..	..	..	..	..	..
Total	..	64	..	355	151	7	513	537	361	960	56	172	417	1,132	120
Kurnool, West.	A ..	82	1	241	52	29	323	405	337	955	16	114	353	1,069	52
	B ..	76	2	357	150	30	539	615	516	1,026	47	178	563	1,204	52
	C ..	..	16	34	..	1	51	..	..	..	..	..	..	..	..
Total	..	158	19	632	202	60	913	1,020	853	1,981	63	292	916	2,273	104
Total, Second Circle.	A * ..	437	2	695	288	57	1,042	1,479	1,177	3,431	63	411	1,240	3,842	239
	B * ..	492	2	2,152	1,224	150	3,528	4,020	3,058	6,964	314	1,241	3,372	8,205	648
	C ..	..	203	121	7	4	335	..	..	..	..	..	..	..	..
Grand total, Second Circle.		929	207	2,968	1,519	211	4,905	5,499	4,235	10,395	377	1,652	4,612	12,047	887
Third Circle.															
Cuddapah, North.	A ..	29	..	155	22	7	184	213	134	357	65	141	199	498	14
	B ..	38	..	255	48	12	315	353	294	546	34	122	328	668	25
	C ..	..	50	35	3	..	88	..	..	..	..	..	..	..	..
Total	..	67	50	445	73	19	587	566	428	903	99	263	527	1,166	39
Cuddapah, South.	A ..	59	..	129	51	5	185	244	139	375	92	337	231	712	13
	B ..	13	..	122	57	..	179	192	163	416	15	37	178	453	14
	C ..	..	..	1	..	..	1	..	..	..	..	..	..	..	..
Total	..	72	..	252	108	5	365	436	302	791	107	374	409	1,165	27
Cuddapah, West.	A ..	49	..	171	88	14	273	322	156	432	130	334	286	766	36
	B ..	26	..	360	124	21	505	531	464	935	53	234	517	1,169	14
	C ..	..	44	49	..	..	93	..	..	..	..	..	..	..	..
Total	..	75	44	580	212	35	871	858	620	1,367	183	568	803	1,935	50
Nellore ..	A ..	212	..	196	234	13	443	655	183	579	287	1,063	470	1,642	185
	B ..	† 390	..	716	771	46	1,533	1,923	1,205	3,182	269	633	1,474	3,815	449
	C ..	..	..	26	..	..	26	..	..	..	..	..	..	..	..
Total	..	602	..	937	1,005	59	2,001	2,578	1,388	3,761	556	1,696	1,944	5,457	634
Chingleput.	A ..	29	..	156	41	4	201	230	155	290	53	105	208	395	22
	B ..	29	..	510	223	2	735	764	600	1,005	65	140	665	1,145	99
	C ..	..	2	3	..	..	5	..	..	..	..	..	..	..	..
Total	..	58	2	669	264	6	941	994	755	1,295	118	245	873	1,540	121
Chittoor ..	A ..	65	..	111	82	29	222	287	222	412	59	118	281	530	6
	B ..	53	..	616	451	146	1,213	1,266	1,107	1,653	126	290	1,233	1,943	33
	C ..	..	108	29	3	2	142	..	..	..	..	..	..	..	..
Total	..	118	108	756	536	177	1,577	1,553	1,329	2,065	185	408	1,514	2,473	39

A = Cases taken to Court. B = Cases compounded. C = Cases undetected.

* Note.—The variations between the closing balance of last year and these figures are due to transfers from B to A.

† Includes 19 cases 'undetected' being the closing balance of last year.

Register of breaches of Forest Rules during 1922-23—*cont.*

District.		Cases pending from 1921-22.	New cases of the year.					Total cases.	Disposed of during the year.						Cases pending at close of year.
			Injury to forest by fire.	Unauthorized felling.	Unauthorized grazing.	Other offences.	Total new cases of the year.		Convictions.		Acquittals.		Total.		
									Cases.	Persons.	Cases.	Persons.	Cases.	Persons.	
Third Circle—cont.															
Vellore, North.	A ..	5	..	223	113	..	336	341	304	779	9	15	313	794	28
	B ..	357	1	1,116	496	15	1,628	1,985	1,577	3,519	56	186	1,633	3,705	352
	C ..	..	56	.	..	..	56	..	..	..	..	..	..	..	..
Total ..		362	57	1,339	609	15	2,020	2,326	1,881	4,298	65	201	1,946	4,499	380
Total, Third Circle.	A ..	448	..	1,141	631	72	1,844	2,292	1,293	3,224	† 695	2,113	1,988	5,337	304
	B ..	966	1	3,695	2,170	242	6,108	7,014	5,410	11,256	618	1,642	6,028	12,898	986
	C ..	..	260	142	6	2	410	..	..	..	..	..	..	..	..
Grand total, Third Circle.		1,354	261	4,978	2,807	316	8,362	9,306	6,703	14,480	1,313	3,755	8,016	18,235	1,290
Fourth Circle.															
Vellore, South.	A ..	225	..	421	103	43	567	792	356	851	70	92	426	943	366
	B ..	586	..	980	269	164	1,413	1,999	1,471	2,738	90	273	1,561	3,011	438
	C .	..	19	41	..	..	60	..	.	..	..	..	..	..	..
Total .		811	19	1,442	372	207	2,040	2,791	1,827	3,589	160	365	1,987	3,954	804
Vellore, West.	A .	66	..	117	52	10	179	245	117	301	28	69	145	370	100
	B ..	153	..	401	128	16	545	698	612	1,279	69	134	681	1,413	17
	C ..	..	..	21	..	.	21	..	..	..	..	..	..	.	..
Total ..		219	..	539	180	26	745	943	729	1,580	97	203	826	1,783	117
Salem, East.	A } *	395	2	762	162	31	957	1,352	701	2,269	57	323	758	2,592	594
	B }	539	..	1,426	346	10	1,782	2,321	1,371	2,964	258	442	1,629	3,406	692
	C ..	..	33	6	..	..	39	..	..	..	..	..	..	..	..
Total ..		934	35	2,194	508	41	2,778	3,673	2,072	5,233	315	765	2,387	5,998	1,286
Salem, North.	A } *	43	2	27	16	10	55	98	79	246	12	32	91	278	7
	B }	72	..	262	116	13	391	463	349	637	60	142	409	779	54
	C .	.	102	..	..	..	102	..	..	..	..	..	..	..	..
Total ..		115	104	289	132	23	548	561	428	883	72	174	500	1,057	61
Salem, † Central.	A ..	458	..	349	61	12	422	880	487	1,312	28 +112§	403	627	1,715	253
	B ..	268	..	637	138	11	786	1,054	532	1,315	322	569	854	1,884	200
	C ..	..	130	..	..	..	130	..	..	..	..	..	..	..	.
Total .		726	130	986	199	23	1,338	1,934	1,019	2,627	462	972	1,481	3,599	453
Salem, † South.	A ..	247	..	252	11	9	272	519	241	1,055	39	87	280	1,142	239
	B ..	756	..	2,002	234	114	2,350	3,106	2,226	4,860	82	163	2,308	5,023	798
	C .	..	31	27	..	..	58	..	..	..	..	..	..	..	..
Total ..		1,003	31	2,281	245	123	2,680	3,625	2,467	5,915	121	250	2,588	6,165	1,037
Total, Fourth Circle.	A ..	1,434	4	1,928	405	115	2,452	3,886	1,981	6,034	346	1,006	2,327	7,040	1,559
	B ..	2,374	..	5,708	1,231	328	7,267	9,641	6,561	13,793	881	1,723	7,442	15,516	2,199
	C ..	..	315	95	..	..	410	..	..	..	..	..	..	..	..
Grand total, Fourth Circle.		3,808	319	7,731	1,636	443	10,129	13,527	8,542	19,827	1,227	2,729	9,769	22,556	3,758

A = Cases taken to Court. B = Cases compounded. C = Cases undetected.

* NOTE.—The variations between the closing balance of last year and these figures are due to transfers between heads A and B.

† Revised figures furnished by the District Forest Officer.

§ Cases withdrawn.

‡ Cases actually acquitted by Magistrate 131
Cases withdrawn after they were taken on Magistrates' file 33
Cases compounded do. do. 531
Total .. 695

Register of breaches of Forest Rules during 1922-23—*cont.*

District.		Cases pending from 1921-22.	New cases of the year. Injury to forest by fire	Unauthorized felling.	Unauthorized grazing	Other offences.	Total new cases of the year.	Total cases.	Disposed of during the year. Convictions. Cases.	Convictions. Persons.	Acquittals. Cases.	Acquittals. Persons.	Total. Cases.	Total. Persons.	Cases pending at close of the year.
Reserved Forests and unreserved lands.															
Fifth Circle.															
Kollegal.	A	* 3	1	16	10	4	31	34	28	85	5	13	33	98	1
	B	* 8	..	271	131	18	420	428	356	886	51	164	407	1,050	21
	C	..	45	..	..	..	45	..	..	..	..	..	..	..	..
	Total	11	46	287	141	22	496	462	384	971	56	177	440	1,148	22
Coimbatore, North.	A	2	3	73	41	3	120	122	95	430	1	6	96	436	26
	B	40	..	471	206	12	689	729	631	1,660	14	76	645	1,736	84
	C	..	132	8	5	..	145	..	..	..	..	..	..	..	..
	Total	42	135	552	252	15	954	851	726	2,090	15	82	741	2,172	110
Coimbatore, South.	A	* 20	..	17	5	4	26	46	25	60	2	4	27	64	19
	B	* 49	1	252	56	23	312	361	296	729	22	52	318	781	43
	C	..	13	..	..	..	13	..	..	..	..	..	..	..	..
	Total	69	14	269	41	27	351	407	321	789	24	56	345	845	62
Madura ..	A	* 661	3	664	130	18	815	1,476	648	2,849	110	611	758	3,460	718
	B	* 383	13	679	159	16	867	1,250	675	2,291	215	431	890	2,722	360
	C	..	261	12	..	..	273	..	..	..	..	..	..	..	..
	Total	1,044	277	1,355	289	34	1,955	2,726	1,323	5,140	325	1,042	1,648	6,182	1,078
Tinnevelly.	A	27	..	204	74	49	327	354	326	911	9	30	335	941	19
	B	323	..	710	221	19	950	1,273	787	1,647	151	311	938	1,958	335
	C	..	48	4	..	..	52	..	..	..	..	..	..	..	..
	Total	350	48	918	295	68	1,329	1,627	1,113	2,558	160	341	1,273	2,899	354
Total, Fifth Circle.	A	* 713	7	974	260	78	1,319	2,032	1,122	4,335	127	664	1,249	4,999	783
	B	* 803	14	2,383	753	88	3,238	4,041	2,745	7,213	453	1,034	3,198	8,247	843
	C	..	499	24	5	..	528	..	..	..	..	..	..	..	..
Grand total, Fifth Circle.		1,516	520	3,381	1,018	166	5,085	6,073	3,867	11,548	580	1,698	4,447	13,246	1,626
Sixth Circle															
Mangalore, North.	A	22	..	27	1	4	32	54	40	51	13	21	53	72	1
	B	80	1	282	9	7	299	379	338	590	(*d*) 18	56	356	646	23
	C	..	12	4	..	..	16	..	..	..	..	..	..	..	..
	Total	102	13	313	10	11	347	433	378	641	31	77	409	718	24
Mangalore, South.	A	18	15	68	9	18	110	128	85	188	13	27	98	215	30
	B	56	50	460	62	37	609	665	404	841	(*d*) 34	84	438	925	227
	C	..	52	4	..	..	56	..	..	..	..	..	..	..	..
	Total	74	117	532	71	55	775	793	489	1,029	47	111	536	1,140	257
Wynaad ..	A	1	..	..	..	..	..	1	..	..	(*d*) 1	1	1	1	..
	B	2 (*e*)	1	10	36	3	50	52	..	..	45 / (*d*) 7	57 / 12	52	69	..
	C	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	3	1	10	36	3	50	53	..	..	53	70	53	70	..
Nilambur.	A	..	..	..	..	1	1	1	..	..	..	..	..	..	1
	B	..	..	1	..	13	14	14	7	10	(*i*) 4	16	11	26	3
	C	..	2	..	..	..	2	..	..	..	..	..	..	..	..
	Total	..	2	1	..	14	17	15	7	10	4	16	11	26	4
Palghat ..	A	14	1	20	13	6	40	54	49	132	1	5	50	137	4
	B	28	..	258	70	38	366	394	339	757	47	104	386	861	8
	C	..	6	1	..	..	7	..	..	..	..	..	..	..	..
	Total	42	7	279	83	44	413	448	388	889	48	109	436	998	12
The Nilgiris.	A	3	1	4	5	19	29	32	26	68	3	10	29	78	3
	B	17	1	129	111	31	272	289	239	550	37	135	276	685	13
	C	..	44	..	..	..	44	..	..	..	..	..	..	..	..
	Total	20	46	133	116	50	345	321	265	618	40	145	305	763	16
Total, Sixth Circle.	A	58	17	119	28	48	212	270	200	439	31	64	231	503	39
	B	183	53	1,140	288	129	1,610	1,793	1,327	2,748	192	464	1,519	3,212	274
	C	..	116	9	..	..	125	..	..	..	..	..	..	..	..
Grand total, Sixth Circle.		241	186	1,268	316	177	1,947	2,063	1,527	3,187	223	528	1,750	3,715	313
Total, Presidency.	A	3,300	31	5,132	1,636	381	7,180	10,480	6 149	18,196	1,342	4,551	7,491	22,747	2,989
	B	4,951	74	16,579	6,043	1,015	23,711	28,662	20,790	46,674	2,597	6,573	23,387	53,247	5,275
	C	..	1,505	452	19	7	1,983	..	..	..	..	..	..	..	..
Grand total, Presidency.		8,251	1,610	22,163	7,698	1,403	32,874	39,142	26,939	64,870	3,939	11,124	30,878	75,994	8,264

A = Cases taken to Court. B = Cases compounded. C = Cases undetected.
(*d*) = Cases withdrawn. (*e*) = Difference due to one case transferred from B to A.
* The variations between the closing balances of last year and these figures are due to transfers from B to A.

Annual Form No. 72.

Forest Department, Madras Presidency.

Area of forest tracts protected from fire during the Calender year 1922.

District.	Forest tracts.	Area protected during the previous year.	During the year under report.			Cost during the year under report.
			Area attempted to be protected.	Fires.	Actually protected.	
	First Circle.	ACS.	ACS.	ACS.	ACS.	RS.
Ganjam ..	Special protection ..	43,791	47,124	3,747	43,377	2,695
	General do. ..	158,578	219,979	19,580	200,399	2,388
	Total, Ganjam ..	202,369	267,103	23,327	243,776	5,083
Vizagapatam.	Special protection ..	77,073 *	88,617	2,087	86,530	1,082
	General do. ..	19,866 *	47,636	190	47,446	337
	Total, Vizagapatam ..	96,939	136,253	2,277	133,976	1,419
Gōdāvari Upper.	Special protection ..	429,311	531,346	6,177	525,169	10,230
Gōdāvari, Lower.	Special protection ..	147,567	152,636	6,700	145,936	4,656
	General do. ..	82,140	82,567	1,865	80,702	869
	Total, Gōdāvari, Lower..	229,707	235,203	8,565	226,638	5,525
Kistna ..	Special protection ..	14,179	14,600	613	13,987	876
	General do. ..	32,811	31,729	..	31,729	266
	Total, Kistna ..	46,990	46,329	613	45,716	1,142
Total, First Circle.	Special protection ..	711,921	834,323	19,324	814,999	19,539
	General do. ..	293,395	381,911	21,635	360,276	3,860
	Grand total ..	1,005,316	1,216,234	40,959	1,175,275	23,399
	Second Circle.					
Bellary ..	Special protection ..	35,856	1,001	..	1,001	255
	General do. ..	248,655	299,999	23,177	276,822	981
	Total ..	284,511	301,000	23,177	277,823	1,236
Anantapur ..	Special protection ..	138,467	132,550	6,559	125,991	349
	General do. ..	338,296	342,831	13,933	328,898	..
	Total ..	476,763	475,381	20,492	454,889	349
Guntūr ..	Special protection ..	..	..	..	..	..
	General do. ..	504,843	501,988	4	501,984	..
	Total ..	504,843	501,988	4	501,984	..
Kurnool, East.	Special protection ..	..	..	..	..	..
	Early burning ..	201,452	201,690	2,310	199,380	2,471
	General protection ..	418,051	322,400	1,846	320,554	1,071
	Total ..	619,503	524,090	4,156	519,934	3,542
Kurnool, South.	Special protection ..	142,242	Transferred to general protection.			
	Early burning ..	207,938	176,360	16,014	160,346	1,446
	General protection ..	122,766	310,022	33,622	276,400	4,521
	Total ..	472,946	486,382	49,636	436,746	5,967
Kurnool, West.	Special protection ..	29,931	30,079	2,142	27,937	733
	Early burning	348,283	348,195	192	348,003	2,716
	General protection ..	9,868	9,868	..	9,868	18
	Total ..	388,082	388,142	2,334	385,808	3,467
Total, Second Circle.	Special protection ..	346,496	163,630	8,701	154,929	1,337
	Early burning	757,673	726,245	18,516	707,729	6,633
	General protection ..	1,642,479	1,787,108	72,582	1,714,526	6,591
	Grand total ..	2,746,648	2,676,983	99,799	2,577,184	14,561
	Third Circle.					
Cuddapah, North.	Special protection ..	113,081	123,998	45,398	78,600	3,513
	General do. ..	186,068	206,355	65,217	141,138	893
	Total ..	299,149	330,353	110,615	219,738	4,406
Cuddapah, South.	Special protection ..	175,556	248,349	89,345	159,004	4,121
	General do. ..	42,099	44,941	6,584	38,357	865
	Total ..	217,655	293,290	95,929	197,361	4,986

* 14,381 acres transferred from special to general protection.

Area of forest tracts protected from fire during the Calendar year 1922—*cont.*

District.	Forest tracts.	Area protected during the previous year.	During the year under report.			Cost during the year under report.
			Area attempted to be protected.	Fires.	Actually protected.	
	Third Circle—cont.	ACS.	ACS.	ACS.	ACS.	RS.
Cuddapah, West.	Special protection ..	199,709	224,400	123,570	100,830	3,256
	General do. ..	260,478	256,819	56,820	199,999	90
	Total ..	460,187	481,219	180,390	300,829	3,346
Nellore ..	Special protection ..	147,001	149,469	5,110	144,359	1,859
	General do. ..	(*a*) 312,406	309,938	8	309,930	..
	Total ..	459,407	459,407	5,118	454,289	1,859
Chingleput..	Special protection ..	15,933	15,975	292	15,683	1,247
	General do. ..	113,951	112,496	8	112,488	..
	Total ..	129,884	128,471	300	128,171	1,247
Chittoor ..	Special protection ..	103,339	113,621	12,745	100,876	5,671
	General do. ..	399,302	414,282	17,983	396,299	..
	Total ..	502,641	527,903	30,728	497,175	5,671
Vellore, North.	Special protection ..	29,148	14,071	8,982	5,089	313
	General do. ..	258,649	273,984	26,309	247,675	..
	Total ..	288,197	288,055	35,291	252,764	313
Total ..	Special protection ..	784,167	889,883	285,442	604,441	19,980
	General do. ..	1,572,953	1,618,815	172,929	1,445,886	1,848
	Total, Third Circle ..	2,357,120	2,508,698	458,371	2,050,327	21,828
	Fourth Circle.					
Vellore, South.	Special protection ..	100,861	100,998	6,737	94,261	713
	General do. ..	191,902	193,280	10,796	182,484	..
	Total ..	302,763	294,278	17,533	276,745	713
Vellore, West.	Special protection ..	102,831	103,423	19,565	83,858	1,303
	General do. ..	140,465	141,083	5,662	135,421	..
	Total ..	243,296	244,506	25,227	219,279	1,303
Salem, East..	Special protection ..	189,949	190,331	11,571	178,760	526
	General do. ..	145,067	145,649	1,942	143,707	..
	Total ..	335,016	335,980	13,513	322,467	526
Salem, North.	Special protection ..	45,423	73,763	1,900	71,863	770
	General do. ..	269,280	260,030	62,921	197,109	..
	Total ..	314,703	333,793	64,821	268,972	770
Salem, Central.	Special protection ..	117,647	116,871	11,853	105,018	1,063
	General do. ..	135,939	136,677	334	136,343	..
	Total ..	253,586	253,548	12,187	241,361	1,063
Salem, South.	Special protection ..	115,415	116,086	1,281	114,805	1,177
	General do. ..	103,896	103,897	47	103,850	..
	Total ..	119,311	119,983	1,328	118,655	1,177
Total ..	Special protection ..	672,126	701,472	52,907	648,565	5,552
	General do. ..	986,549	980,616	81,702	898,914	..
	Total, Fourth Circle ..	1,658,675	1,682,088	134,609	1,547,479	5,552
	Fifth Circle.					
Kollegal ..	Special protection ..	33,219	1,618	417	1,201	354
	General do. ..	561,654	597,068	37,796	559,272	898
	Total ..	594,873	598,686	38,213	560,473	1,252

(*a*) Revised figure.

Area of forest tracts protected from fire during the Calendar year 1922—*cont.*

District.	Forest tracts.	Area protected during the previous year.	During the year under report.			Cost during the year under report.
			Area attempted to be protected.	Fires.	Actually protected.	
	Fifth Circle—cont.	ACS.	ACS.	ACS.	ACS.	RS.
Coimbatore, North.	Special protection ..	18,959	2,073	..	2,073	386
	General do. ..	517,540	561,900	58,818	503,082	2,863
	Total ..	536,499	563,973	58,818	505,155	3,249
Coimbatore, South.	Special protection ..	46,439	47,350	1,000	46,350	933
	General do. ..	199,447	200,993	1,044	199,949	..
	Total ..	245,886	248,343	2,044	246,299	933
Madura ..	Special protection ..	129,157	155,631	9,215	146,416	5,868
	General do. ..	276,890	266,700	8,511	258,189	..
	Total ..	406,047	422,331	17,726	404,605	5,868
Tinnevelly ..	Special protection ..	33,771	35,688	2,866	32,822	2,842
	General do. ..	197,178	206,712	6,503	200,209	..
	Total ..	230,949	242,400	9,369	233,031	2,842
Total ..	Special protection ..	261,545	242,360	13,498	228,862	10,383
	General do. ..	1,752,709	1,833,373	112,672	1,720,701	3,761
	Grand total ..	2,014,254	2,075,733	126,170	1,949,563	14,144
	Sixth Circle.					
Mangalore, North.	Special protection ..	32,606	32,812	134	32,678	1,148
	General do. ..	196,141	197,164	86	197,078	1,314
	Total ..	228,747	229,976	220	229,756	2,462
Mangalore, South.	Special protection ..	106,370	264,589	1,972	262,617	2,813
	General do. ..	170,420	16,302	238	16,064	213
	Total ..	276,790	280,891	2,210	278,681	3,026
Wynaad ..	Special protection ..	139,251	143,055	1	143,054	2,985
Nilambur ..	Special protection ..	81,573	32,817	54	32,763	3,048
Palghat ..	Special protection ..	124,682	126,235	286	125,949	3,203
	General do. ..	42,629	42,610	321	42,289	..
	Total ..	167,311	168,845	607	168,238	3,203
The Nilgiris.	Special protection ..	71,923	76,657	..	76,657	2,652
	General do. ..	239,317	242,616	2,445	240,171	..
	Total ..	311,240	319,273	2,445	316,828	2,652
Grand total.	Special protection ..	556,405	676,165	2,447	675,718	15,849
	General do. ..	648,507	498,692	3,090	495,602	1,527
	Grand total, Sixth Circle ..	1,204,912	1,174,857	5,537	1,169,320	17,376
Total, Presidency.	Special protection ..	3,332,660	3,507,833	382,319	3,125,514	72,640
	General do. ..	6,896,592	7,100,515	464,610	6,635,905	17,587
	Early burning	757,673	726,245	18,516	707,729	6,633
	Grand total, Presidency ..	10,986,925	11,334,593	865,445	10,469,148	96,860

Annual Form No. 73.

Forest Department, Madras Presidency.

Area closed and open to grazing during 1922–23.

District.	Closed to all animals.		Open to grazing			
			Of all animals except goats.		Of all animals except browsers (sheep and goats).	
	Whole year.	Part of year.	Whole year.	Part of year.	Whole year.	Part of year.
First Circle.						
Reserved forests.						
	Sq. mls.	Sq. mls.	Sq. mls.	Sq. mls.	Sq. mls.	Sq. mls.
Ganjām	90	..	535	..	..	..
Vizagapatam	18	..	281	..	9	..
Gōdāvari, Upper	..	..	830	..	..	..
Do. Lower	30	..	444	..	..	..
Kistna	40	17	208	..	..	..
Total	178	17	2,298	..	9	..
Reserved lands.						
Vizagapatam	..	..	2	..	..	..
Gōdāvari, Lower	..	..	12	.	..	..
Kistna	..	..	1	..	..	..
Total	..	..	15	..	..	..
Second Circle.						
Reserved forests.						
Bellary	50	..	512	..	..	..
Anantapur	61	..	669	..	..	..
Guntūr	61	..	433	..	290	..
Kurnool, East	..	..	970	..	..	..
Do. South	546	..	214	..	..	..
Do. West	228	2	623	..	..	..
Total	946	2	3,421	..	290	..
Reserved lands.						
Nil.						
Third Circle.						
Reserved forests.						
Cuddapah, North	80	..	516	..	..	..
Do. South	76	..	386	..	..	..
Do. West	70	..	676	..	..	..
Nellore	191	487	40	..	..	..
Chingleput	58	129	14	..	..	..
Chittoor	146	149	529	..	..	..
Vellore, North	90	41	322	..	..	..
Total	711	806	2,483	.	..	..
Reserved lands.						
Cuddapah, North	1	..	..	..	..	..
Nellore	11	..	..	..	..	..
Total	12	..	..	..	..	..

Area closed and open to grazing during 1922-23—*cont.*

District.	Closed to all animals.		Open to grazing			
			Of all animals except goats.		Of all animals except browsers (sheep and goats).	
	Whole year.	Part of year.	Whole year.	Part of year.	Whole year.	Part of year.
FOURTH CIRCLE.						
Reserved forests.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.	SQ. MLS.
Vellore, South	73	..	407	..	..	..
Do. West	17	..	365	..	..	..
Salem, East	93	..	467	..	..	..
Do. North	47	..	474	..	..	..
Do. Central *	16	6	371	11	..	..
Do. South	41	..	303	..	..	..
Total	287	6	2,387	11	..	..
Reserved lands.						
Vellore, South	(*a*) ..	..	..	..	..	..
Do. West	..	..	..	..	..	..
Salem, East	..	..	12	..	..	..
Do. North	..	..	..	..	..	..
Do. Central	6	..	6	..	..	..
Do. South	(*a*) ..	..	33	..	..	..
Total	6	..	51	..	..	..
FIFTH CIRCLE.						
Reserved forests.						
Kollegal	3	..	938	..	..	..
Coimbatore, North	17	..	864	..	..	..
Do. South	226	..	228	..	..	..
Madura	110	..	240	..	310	..
Tinnevelly	307	..	1	..	116	..
Total	663	..	2,271	..	426	..
Reserved lands.						
Tinnevelly	2	..	..	..	..	..
Grand total	665	..	2,271	..	426	..
SIXTH CIRCLE.						
Reserved forests.						
Mangalore, North	14	..	346	..	..	..
Do. South	9	..	430	..	..	..
Wynaad	..	..	..	..	263	..
Nilambur	108	..	..	..	..	..
The Nilgiris	23	..	389	..	..	..
Palghat	160	..	104	..	..	..
Total	314	..	1,269	..	263	..
Reserved lands.						
Nilambur	19	..	..	..	..	..
The Nilgiris	10	..	77	..	..	..
Total	29	..	77	..	..	..
Grand total, Presidency	3,148	831	14,272	11	988	..

(*a*) Represents area below one square mile.

* About five square miles of reserved forest in Central Salem division has been leased out for cultivation and excluded from this return.

ANNUAL

Forest Department,

Return of grazing in the

District.	Grazing on payment.									
	At enhanced or special rates.					At full rates.				
	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Fees received.	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Fees received.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
FIRST CIRCLE.										
Reserved forests.					Rs.					Rs.
Ganjam	..	..	..	..	..	(*a*) 6,786	(*a*) 35,228	(*a*) S 136	..	9,163 • 29
Vizagapatam ..	(*b*) 470	(*b*) 6,273	(*b*) S 1,132	..	3,889	(*a*) 17	(*a*) 4,302	..	..	813
Godavari, Upper..	..	..	..	..	..	..	..	..	..	..
Do. Lower ..	(*d*) 1,355	(*d*) 656	..	..	1,262	(*e*) 5,265	(*e*) 4,847	..	..	3,844 † 2
Kistna	(*h*) 414	(*d*) 3,700 (*h*) 3,234	(*d*) S 3,294	..	5,549	(*a*) 4,256	16,2 16	(*a*) S 13,815	..	5,932 ‡ 750 ‖ 455 § 283
Total ..	2,239	13,863	S 4,426	..	10,700	16,324	60,593	S 13,951	..	19,752 • 29 † 2 ‡ 750 ‖ 455 § 283
Unreserved lands.										
Ganjam	..	..	..	..	..	..	..	..	..	‖ 33
Godavari, Lower..	..	..	..	..	..	(*e*) 5,421	(*e*) 5,537	(*g*) G 91	..	4,101 ‖ 1,310
Kistna	..	..	..	..	..	(*a*) 744	(*a*) 02	..	..	336 ‖ 21
Total ..	..	..	..	..	..	6,165	5,839	G 91	..	4,437 ‖ 1,364
Grand Total ..	2,239	13,863	S 4,426	..	10,700	22,489	66,432	S 13,951 G 91	..	24,189 • 29 † 2 ‡ 750 ‖ 1,819 § 283
SECOND CIRCLE.										
Bellary	(*a*) 746	4,021	2,719	..	6,873	6,509	35,828	86,344	..	17,253 (*g*) 5,237 (*h*) 944
Anantapur	(*b*) ..	..	..	..	..	2,029	51,763	84,037	..	48,920 (*g*) 572
Guntur	(*c*) 5,751	31,719	61,437	..	55,455	8,889 1,689	36,547 3,268	18,440 25,518	..	81,773 4,851 (*h*) 2,193 (*g*) 6,353 (*i*) 118
Kurnool, East ..	(*d*) 636	19,921	..	..	21,193	2,600	15,599	25,623	..	16,155 (*g*) 2,325 (*h*) 33
Do. South ..	(*e*) ..	1,422	200	..	1,522	2,106	12,566	17,102	..	12,138
Do. West ..	37	6,184	..	..	6,258	5,974	27,039	37,082	..	27,271 (*g*) 30 (*h*) 77
Total ..	7,170	63,267	64,356	..	91,301	29,796	182,610	294,146	..	1,76,243

Note for First Circle.—

S = Sheep. G = Goats.

• Added to agree with the Accountant-General's figures. † Penning fees.

‡ Revenue from forests handed over to panchayat management. § Sale-proceeds of mangrove leaves.

‖ Sale-proceeds of fodder grass.

(*a*) Six annas per buffaloe, 3 annas per cow or bullock and 1 anna and 6 pies per sheep.
(*b*) One rupee per buffaloe, 8 annas per cow or bullock and 4 annas per sheep.
(*c*) The privileged rates are 4 annas per buffaloe, 2 annas per cow or bullock and 1 anna per sheep.
(*d*) Twelve annas per buffaloe, 6 annas per cow or bullock and 3 annas per sheep.
(*e*) Eight annas do. 4 do. do.
(*f*) One anna do. 1 do. do
(*g*) One anna per goat.
(*h*) One rupee per plough bull.

FORM No. 74.

Madras Presidency.

State forests during 1922–23.

Number of animals.						Grazing free—Number of animals.										Total value of fees at full rates.	Grand total of value at full rates.
At privileged rates.						By right under settlement.					During pleasure of Government or otherwise than under settlement.						
				Fees received.													
Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Actual.	Value at full rates.	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Value of fees at full rates.	Buffaloes.	Cows and bullocks.	Goats and sheep.	Other animals.	Value of fees at full rates.		
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
				Rs.	Rs.					Rs.					Rs.	Rs.	Rs.
..	..	..	..	..	..	(a) 436	(a) 1,277	..	..	403	(a) 347	(a) 2,218	..	..	546	949	10,112 * 29
..	..	..	..	..	..	..	..	..	..	..	(a) ..	(a) 4,629 (b) 153	..	..	868 77	868 77	5,647
(c) 5,883	(c) 40,546	(c) S 7,799	..	7,026	10,540	..	..	..	..	..	3,670	(a) 36,151	(a) S 144	..	8,168	8,168	18,708
(e) 981 (f) 466	(e) 9,946 (f) 11,722	..	..	1,488 762	4,605	..	..	..	..	..	(e) 837	(e) 7,588	..	..	2,316	2,316	12,027 † 2 11,481 ‡ 750 ‖ 455 § 283
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
7,330	62,214	S 7,799	..	9,276	15,145	436	1,277	..	..	403	4,854	50,739	S 144	..	11,975	12,378	57,975 * 29 † 2 ‡ 750 ‖ 455 § 283
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	‖ 33
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4,101 ‖ 1,310
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	336 ‖ 21
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4,437 ‖ 1,364
7,330	62,214	S 7,799	..	9,276	15,145	436	1,277	..	..	403	4,854	50,739	S 144	..	11,975	12,378	62,412 * 29 † 2 ‡ 750 ‖ 1,819 § 283
..	..	..	..	..	..	..	..	..	..	..	..	3,285	..	..	616	616	30,923
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	49,492
..	..	..	..	..	..	..	..	..	..	..	26	115	..	..	42	42	1,00,785
..	..	..	..	..	..	..	320	1,460	..	1,050	710	776	..	..	2,196	3,246	42,952
..	..	..	..	..	..	12	11	57	..	29	..	..	..	..	..	29	13,689
..	..	..	..	..	..	261	202	330	..	379	..	..	..	..	..	379	34,015
..	..	..	..	..	..	273	533	1,847	..	1,458	736	4,176	..	..	2,854	4,312	2,71,856

Note for Second Circle—

(a) Enhanced rates are Rs. 2 per buffaloe, Re. 1 per cow and 8 annas a sheep. Full rates are 6 annas per buffaloe, 3 annas a cow and 1 anna and 6 pies a sheep.

(b) Full rates are Re. 1 per buffaloe, 8 annas per cow and 4 annas per sheep.

(c) Enhanced rates are Rs. 1-8-0 a buffaloe, 12 annas per cow and 6 annas per sheep. Full rates are Re. 1 a buffaloe, 8 annas a cow and 4 annas a sheep and revised rates as per G.O. No. 892, dated 5th July 1922, are Re. 1 a buffaloe, 8 annas a cow and 4 annas a sheep.

(d) Enhanced rates are Rs. 2 a buffaloe and Re. 1 a cow. Full rates are 12 annas a buffaloe, 8 annas a cow and 4 annas a sheep.

(e) Enhanced rates are Re. 1 a cow and 8 annas a sheep. Full rates are 12 annas a buffaloe, 8 annas a cow and 4 annas a sheep.

(f) Enhanced rates are Rs. 2 a buffaloe, Re. 1 a cow and 8 annas a sheep. Full rates are 12 annas a buffaloe, 8 annas a cow and 4 annas sheep.

(g) Collections from panchayatdars.

(h) Sale-proceeds of fodder grass includes value of hay removed by Military Department in the Bellary district.

(i) Penning fees.

Return of grazing in the

District.	Grazing on payment—									
	At enhanced or special rates.					At full rates.				
	Buffaloes.	Cows and bullocks.	Sheep.	Other animals.	Fees received.	Buffaloes.	Cows and bullocks.	Sheep.	Other animals.	Fees received.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
					RS.					RS.
THIRD CIRCLE.										
Cuddapah, North ..	..	(a) 10,357	..	..	10,357	3,794	13,023	54,036	..	8,931 (b) 787
Do. South ..	..	(a) 5,473	..	..	5,473	271	12,484	12,860	..	3,648 (b) 1,156
Do. West ..	..	(a) 10,026	..	..	10,026	4,099	29,604	93,261	..	15,831 (b) 2,605 (d) 1,139
Nellore	(f) 5 (g) 449	5 2,726	.. 354	.. ..	13 1,788	.. ..	.. ..	.. ..	.. ..	(b) 49 (d) 1,113 (h) 76,076
Chingleput	..	..	..	..	..	..	..	..	..	(d) 1,389 (h) 22,798
Chittoor	(i) 1,127	73,642	23,505	..	43,824	..	..	..	..	(b) 76 (d) 186 307
Vellore, North	(i) 618	39,096	25,360	..	26,506	142	1,327	50	..	(d) 3,058 (f) 924
Total ..	2,199	141,325	49,219	..	97,987	8,306	56,438	160,207	..	1,40,073
FOURTH CIRCLE.										
Vellore, South	..	..	..	..	..	(a) 88 (b) 243 (l) .. (m) ..	6,417 28,088	2,486 6,564	.. ..	7,836 15,928 2,657 3,444 (n) + 102
Do. West	..	..	..	..	..	(a) .. (b) 267 (c) .. (d) .. (e) .. (f) 91	11,542 26,383 7,532 660 1,228 2,918	.. 1,884 2,414 3,813	.. ..	11,542 13,929 4,219 248 307 939
Salem, East	..	..	..	..	..	(a) 206 (g) 167 (h) .. (i) .. (j) ..	17,310 34,270 9,572	6,805 1,371	.. ..	21,125 19,850 6,230 30 2,125
Do. North	..	..	..	..	..	(k) 1,155	47,206	983	..	24,715
Do. Central	..	..	..	..	..	(c) 325 (g) 13	41,654 18,503	14,699 1,907	.. ..	23,827 10,959 (n) + 1
Do. South	..	..	..	..	..	(g) 169 (d) .. (m) ..	15,396 6,268 ..	22,306 1,341 ..	.. .. ..	16,124 † — 92 2,602 10,097
Total ..	..	..	..	..	..	2,724	274,947	66,573	..	1,97,744

Note for Third Circle.—

Note.—The full rates are 6 annas per buffalo, 3 annas per cow, bullock or other animal and 1½ annas per sheep.

Cuddapah, North.—(a) Rupee 1 per cow.
(b) Penning licence fees.
(c) Privileged rates—1 anna per cow and 6 pies per sheep.

Do. *South.*—(a) Rupee 1 per cow.

Do. *West.*—(a) Rupee 1 per cow.
(d) Panchayat fees.
(e) Privileged rate—1½ annas per cow.

Nellore.—(f) Rupees 1-8-0 per buffalo, 1 rupee per cow.
(g) 12 annas per buffalo, 8 annas per cow and 4 annas per sheep.
(h) Kancha rent.

Chittoor.—(i) Rupee 1 per buffalo, 8 annas per cow and 4 annas per sheep.

Vellore, North.—(i) Rupee 1 per buffalo, 8 annas per cow and 4 annas per sheep.
(f) Fodder grass to Military Grass. Farm Dept.

State forests during 1922-23—*cont.*

Number of animals — At privileged rates.*						Grazing free—Number of animals. — By right under settlement.					During pleasure of Government or otherwise than under settlement.					Total value of fees at full rates.	Grand total of value at full rates.
				Fees received.													
Buffaloes.	Cows and bullocks.	Sheep.	Other animals.	Actual.	Value at full rates.	Buffaloes.	Cows and bullocks.	Sheep.	Other animals.	Value of fees at full rates.	Buffaloes.	Cows and bullocks.	Sheep.	Other animals.	Value of fees at full rates.		
(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)
				Rs.	Rs.					Rs.					Rs.	Rs.	Rs.
..	(*c*) 220	434	..	27	82	..	..	..	..	..	190	45	850	..	159	159	20,316
..	..	..	..	..	..	..	657	..	..	123	..	..	..	..	..	123	10,400
..	(*e*) 344	..	..	32	64	..	..	..	..	..	..	..	..	..	..	..	29,665
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	79,039
..	..	..	..	..	..	..	..	..	..	..	..	81	..	..	15	15	24,202
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	44,086
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	30,795
..	564	434	..	59	146	..	657	..	..	123	190	126	850	..	174	297	2,38,503
(*f*) 3,550	17,247	1,249	..	4,682 (*o*)-287	12,486 ..	..	..	..	..	..	..	..	..	..	..	..	42,453
(*f*)978	6,375	973	..	1,651	4,404	..	..	..	..	..	..	..	..	..	..	..	35,588
(*b*) ..	60	5	..	31	63	..	..	..	..	..	..	..	..	..	..	..	50,229
(*d*) 24	1,393	..	..	269	806												
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	24,715
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	34,787
..	..	..	..	..	..	(*f*)..	432	..	..	81	..	..	..	..	..	81	27,812
4,543	25,075	2,227	..	6,346	17,759	..	432	..	..	81	..	..	..	..	..	81	2,15,584

* The rates should be specified at the foot of the statement.

Note for Fourth Circle.—

1 buffalo = 2 cows = 4 sheep.

(*a*) Rupee 1 per cow unit.
(*b*) 8 annas per cow unit.
(*c*) 8 annas a cow, 12 annas a buffalo and 3 annas a sheep.
(*d*) 6 annas per cow unit.
(*e*) 4 annas per cow unit.
(*f*) 3 annas per cow unit.
(*g*) 9 anna per cow unit.
(*h*) Grzinag panchayats—Reserves and unreserves in East Salem.
(*i*) Grazing fees in Tanjore district.
(*j*) Grazing assessment in chitteris and Atar Kalroyans.
(*k*) 8 annas a cow, 12 annas a buffalo and 4 annas a sheep.
(*l*) Grazing deposit relating to 1921-22 but adjusted in 1922-23.
(*m*) Collection by panchayats in Tiruvannamalai and Gingee.
(*n*) Added to agree with the Accountant-General's audited figures.
(*o*) Amount adjusted in April 1923.

† Rupees 92 recovered from the Permit Issuing officers.

Return of grazing in the

District.	Grazing on payment—									
	At enhanced or special rates.					At full rates.				
	Buffaloes.	Cows and bullocks.	Goats and Sheep.	Other animals.	Fees received.	Buffaloes.	Cows and bullocks.	Goats and Sheep.	Other animals.	Fees received.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Fifth Circle.					Rs.					Rs.
Kollegal	(a) 3,905	(a) 74,397	S (a) 3,130	..	41,886	..	..	..	..	..
	..	..	..	..	(f) 114					
Coimbatore, North ..	(a) 3,508	(a) 65,197	S (a) 18,408	..	40,709	..	..	..	..	..
	(b) 14	(b) 2,310	S (b) 964	..	2,820					
	..	..	..	..	(f) 2,667					
	(a) 178	(a) 8,306	S (a) 110	..	4,354					
Do. South ..	(b) 59	(b) 365	..	..	483	..	..	..	..	..
	..	..	..	..	(f) 1,011					
	..	..	..	..	(g) 485					
	(a) 4	(a) 253	..	..	131					
	(c) 197	(c) 4,797	S (c) 3,310	(c) 174	1,755					
Madura	..	(d) 12,339	S (d) 1,042	..	8,038	..	..	..	..	..
	..	(e) 13,500	S (e) 280	..	10,265					
	..	..	..	..	(g) 2,768					
Tinnevelly	(a) 565	(a) 14,398	S (a) 13,871	..	11,232	142	5,032	S 13,521	..	2,264
	..	..	.	..	(g) 625					
Total ..	8,425	195,862	41,115	174	1,29,343	142	5,032	13,521	..	2,264
Sixth Circle.										
Reserved forests.										
Mangalore, North ..	(a) 1,376	12,095	..	..	5,395	..	..	..	..	..
Do. South ..	(a) 2,056	15,037	.	..	6,934	..	..	..	..	..
Wynaad	(b) 2,365	4,253	..	(e) 3 elephants.	4,497	..	..	..	..	..
Nilambur	(c) ..	..	..	..	..	..	..	..	..	..
The Nilgiris	(b) 13	578	62	..	318	(h) 11,009	16,822	1,544	..	7,440
	..	..	..	..	..	£*	123*	..	..	(f) 127
Palghat..	(d) ..	746	350	..	921	..	..	..	..	(f) 361
	(b) 88	6,571	1,140	..	3,659	..	..	..	..	(g) 1,889
Total ..	5,898	39,280	1,552	3	21,714	11,017	16,945	1,544	..	9,817
Reserved lands.										
The Nilgiris	..	617	..	..	309	161	460	..	..	147
	..	..	..	..	..	..	..	..	..	..
Total, VI Circle ..	5,898	39,897	1,552	3	22,023	11,178	17,405	1,544	..	9,964
Grand total, Presidency ..	25,931	454,214	160,668	177	3,51,354	74,635	602,864	550,033	..	5,53,360

Note for Fifth Circle.—

Full rates.—As. 6 per buffalo, As. 3 per cow or bullock and As. 1½ per sheep.

S—Sheep.

(a) Re. 1 per buffalo, As. 8 per cow or bullock and As. 4 per sheep.
(b) Rs. 2 per buffalo, Re. 1 per cow or bullock and As. 8 per sheep.
(c) As. 8 per buffalo, As. 4 per cow or bullock, As. 2 per sheep and As. 4 per other animal.
(d) As. 10 per cow or bullock and As. 5 per sheep.
(e) As. 12 per cow or bullock and As. 8 per sheep.
(f) Sale-proceeds of fodder grass.
(g) Revenue from forests handed over to panchayat management.

Note for Sixth Circle.—

* Full rates.—Buffaloes As. 6, cows As. 3 and sheep As. 1-6.

(a) Buffalo As. 10, cow or bullock As. 6.
(b) Buffalo Re. 1, cow or bullock As. 8, sheep As. 4.
(c) No grazing allowed in the district.
(d) Buffalo Rs. 2, cow or bullock Re 1, sheep As. 8.
(e) Elephant—annas 4 per diem.
(f) Revenue from fodder grass.
(g) Revenue from forests under panchayat management.
(h) Buffalo As. 6, cow or bullock As. 3, sheep As. 1½.
(k) Cattle admitted to Kulkunda cattle fair at As. 2 per head.
(l) Slaughter cows As. 3 per 50 per day, sheep As. 1½ per 50 per day.

* Calves—half rates.

State forests during 1922-23—*cont.*

Number of animals.						Grazing free. Number of animals.										
At privileged rates.						By right under settlement.					During pleasure of Government or otherwise than under settlement.					
Buffaloes. (12)	Cows and bullocks. (13)	Goats and Sheep. (14)	Other animals. (15)	Fees received. Actual. (16)	Fees received. Value at full rates. (17)	Buffaloes. (18)	Cows and bullocks. (19)	Goats and Sheep. (20)	Other animals. (21)	Value of fees at full rates. (22)	Buffaloes. (23)	Cows and bullocks. (24)	Goats and Sheep. (25)	Other animals. (26)	Value of fees at full rates. (27)	Total value of fees at full rates. (28)	Grand total of value at full rates. (29)
				Rs.	Rs.					Rs.					Rs.	Rs.	Rs.
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	42,000
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	46,196
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,333
..	..	..	..	..	..	618	3,910	S 435	..	1,341	..	..	..	..	..	1,341	24,298
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14,121
..	..	..	..	..	..	618	3,910	435	..	1,341	..	..	..	..	..	1,341	1,32,948
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,395
..	26,204(*k*)	..	..	3,276	9,827	..	..	..	..	..	..	..	..	..	..	..	16,751
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4,497
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	5,350(*l*)	26,800	..	140	3,516	..	..	..	..	..	..	..	..	..	..	..	11,401
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6,850
..	31,554	26,800	..	3,416	13,343	..	..	..	..	..	..	..	..	..	..	..	44,874
..	..	..	..	..	..	..	..	..	..	..	1,664	232	..	..	674	674	1,130
..	..	..	..	..	..	..	..	..	..	..	20*	28*	..	..	..	..	..
..	31,554	26,800	..	3,476	13,343	..	..	..	..	..	1,684	260	..	..	674	674	46,004
11,873	119,407	37,260	..	19,097	46,393	1,327	6,809	2,282	..	3,406	7,464	55,301	994	..	15,677	19,083	9,70,190

Abstract of animals permitted to grazing on payment in reserved forests and reserved lands in the Presidency.

Circle.	Buffaloes.	Bullocks and cows.	Sheep.	Other animals.	Total.
First Circle	32,058	142,509	26,176	* 91	200,834
Second ,, ...	36,966	245,877	358,502	..	641,345
Third ,, ...	10,505	198,327	209,860	..	418,692
Fourth ,, ...	7,267	300,022	68,800	..	376,089
Fifth ,, ...	8,567	200,894	54,636	174	264,271
Sixth ,, ...	17,076	88,856	29,896	3	135,831
Grand total ..	112,439	1,176,485	747,870	268	2,037,062

* Goats.

Annual Form No. 75.

Forest Department, Madras Presidency.

Area under artificial reproduction, 1922–23.

District.	Area in acres.				Expenditure during the year.		Total expenditure from commencement.		Revenue during the year.	Total revenue from date of creation of plantation.
	On 1st April 1922.	Added during the year.	Exoluded during the year.	Area on 31st March 1923.	Creation.	Upkeep.	Creation.	Upkeep.		
First Circle.										
A.—Regular Plantations.					Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Vizagapatam ..	51	..	..	51	..	108	2	2,314	75	5,264
Gōdāvari, Lower ..	76	..	38	38	..	105	31,150	15,750	7,000	91,983
Kistna	34	..	..	34	..	114	1,735	7,846	174	4,389
Total ..	161	..	38	123	..	327	32,887	25,910	7,249	1,01,636
B.—Taungya Plantations.										
Ganjām	2	..	2	..	..	..	..	..	..	..
Gōdāvari, Upper ..	117	(a) 5	..	122	24	122	683	122	..	..
Total ..	119	5	2	122	24	122	683	122	..	..
C.—Cultural Operations.										
Ganjām	121	131	..	252	133	581	(b) 461	(b) 1,424	..	..
Vizagapatam ..	16	7	15	8	— 130	..	96	..	..	..
Gōdāvari, Upper ..	24	..	..	24	10	..	120	1	..	..
Do. Lower ..	2,609	6	..	2,615	90	..	3,114	1,032	..	..
Kistna	104	4	32	76	15	102	721	254	..	719
Total ..	2,874	148	47	2,975	118	683	4,512	2,711	..	719
Grand total, I Circle..	3,154	153	87	3,220	142	1,132	38,082	28,743	7,249	1,02,355
Second Circle.										
A.—Regular Plantations.										
Bellary	579	..	..	579	..	..	9,423	63,246	250	7,015
Guntūr	150	..	..	150	..	..	(c) 1,797	(c) 811	..	(c) 73
Kurnool, East ..	130	12	18	124	..	..	38,471	26,045	..	..
Do. West ..	1,430	..	..	1,430	..	1,098	2,92,254	68,679	979	20,219
Total ..	2,289	12	18	2,283	..	1,098	(c) 3,41,945	(c) 1,58,881	1,229	27,307
B.—Tangedu Plantation.										
Kurnool, West ..	..	254	..	254	4,764	..	4,764	..	195	..
C.—Cultural Operations.										
Bellary	6,790	..	..	6,790	..	..	27,981	3,006	..	..
Anantapur	160	31·5	10	181·5	139	5	(c) 615	85	..	..
Guntūr	..	..	..	..	..	..	1,844	6	..	..
Kurnool, East ..	731	168·0	267	632·0	472	243	(c) 11,944	3,804	..	..
Do. South ..	527	..	..	527·0	93	..	5,558	1,765	..	..
Do. West ..	6,008	1,013·0	..	7,021·0	6,895	87	31,901	3,844	..	..
Total ..	14,216	1,212·5	— 277	15,151·5	7,599	335	(c) 79,843	12,510	..	..
Grand total, II Circle.	16,505	1,478·5	295	17,688·5	12,363	1,433	4,26,552	1,71,391	1,424	27,307
Third Circle.										
A.—Regular Plantations.										
Cuddapah, North ..	10	..	..	10	..	..	560	..	..	..
Do. South ..	38	..	..	38	..	291	23	1,549	21	6,873
Do. West ..	..	..	..	..	..	..	..	..	..	..
Nellore	1,680	..	..	1,680	..	..	1,56,709	17,299	10,092	3,17,231
Chingleput	..	..	..	..	..	..	..	..	..	..
Chittoor	61	1	1	61	..	468	..	3,014	..	51
Vellore, North ..	325	..	.	326	..	1,530	24,287	1,43,582	3,371	97,557
Total .	2,114	1	1	2,114	..	2,289	1,81,579	1,65,444	13,484	4,21,712

(a) Added by rectification.
(b) Revised figures furnished by the District Forest Officer.
(c) Difference is due to exclusion of figures on areas abandoned.

Area under artificial reproduction, 1922-23—*cont.*

District.	Area in acres.				Expenditure during the year.		Total expenditure from commencement.		Revenue during the year.	Total revenue from date of creation of plantation.
	On 1st April 1922.	Added during the year.	Excluded during the year.	Area on 31st March 1923.	Creation.	Upkeep.	Creation.	Upkeep.		
					Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
THIRD CIRCLE—*cont.*										
***B.—Taungya Plantations*—Nil.**										
C.—Cultural Operations.										
Cuddapah, North ..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	..	..	..	..	..
Nellore	416	..	..	416	33	..	2,800	..	225	225
Chingleput	..	..	..	..	..	..	..	..	..	..
Chittoor	5,780	946	..	6,726	158	379	5,148	1,903	..	..
Vellore, North ..	1,666	..	80	1,586	31	..	1,765	154	..	579
Total ..	7,862	946	80	8,728	222	379	9,713	2,057	225	804
Grand total, III Circle	9,976	947	81	10,842	222	2,668	1,91,292	1,67,501	13,709	4,22,516
FOURTH CIRCLE.										
A.—Regular Plantations.										
Vellore, South ..	97	..	..	97	28	546	3,180	1,749	1,018	6,698
B.—Taungya Plantation.										
Vellore, South ..	8	..	8	..	..	..	50	..	..	..
C.—Cultural Operations.										
Vellore, South ..	27,054	3,914	..	30,968	210	..	1,712	..	..	..
Do. West ..	1,141	143	..	1,284	7	..	144	..	..	..
Salem, East ..	14,464	..	..	14,464	6	..	3,395	3,572	..	..
Do. Central ..	2,181	411	..	2,592	346	..	10,482	544	..	..
Total ..	44,840	4,468	..	49,308	569	..	(*a*)15,733	4,116	..	..
Grand total, IV Circle	44,945	4,468	8	49,405	597	546	(*a*)18,913	5,865	1,018	6,698
FIFTH CIRCLE.										
A.—Regular Plantations.										
Coimbatore, South ..	214	(*b*) 251	..	465	5,304	2,609	8,814	4,470	..	..
Madura	(*c*)1,516	29	18	1,527	735	646	(*d*)61,615	(*d*) 4,429	71	(*d*) 8,428
Tinnevelly	(*e*)5,362	61	..	5,423	1,880	132	9,809	3,424	7,675	32,280
Total ..	7,092	341	18	7,415	7,919	3,387	80,238	12,323	7,746	40,708
B.—Taungya Plantation.										
Tinnevelly	23	..	..	23	..	..	47	237	..	..
C.—Cultural Operations.										
Kollegal	484	..	484	..	..	..	1,394	196	..	..
Coimbatore, North ..	935	..	..	935	..	277	2,610	1,210	..	..
Do. South ..	51	10	..	61	249	80	648	241	..	..
Tinnevelly	4,910	(*f*) 250	..	5,160	3,037	33	10,269	7,232	..	215
Total	6,380	260	484	6,156	3,286	390	14,921	8,879	..	215
Grand total, V Circle.	13,495	601	502	13,594	11,205	3,777	95,206	21,439	7,746	40,923
SIXTH CIRCLE.										
A.—Regular Plantations.										
Mangalore, North ..	..	..	..	..	..	..	..	..	..	..
Do. South ..	52	..	..	52	..	174	10,357	174	2,508	3,024
Wynaad	393	85	..	478	1,733	2,132	18,276	24,016	400	16,096
Nilambur	6,902	89	..	6,991	7,543	8,165	5,90,936	5,87,794	1,58,414	43,33,141
The Nilgiris ..	1,835	32	..	1,867	3,216	2,627	13,229	3,18,094	31,730	9,22,782
Palghat	..	..	..	..	..	..	..	..	..	..
Total ..	9,182	206	..	9,388	12,492	13,098	6,32,798	9,30,078	2,03,052	52,75,043

(*a*) Compared with the last return, the difference of Rs. 63, being expenditure on certain areas in South Salem division given up in 1921-22 as failure, has been omitted in this return.

(*b*) Two hundred and fifty-one acres were prepared and partially sown; the sowing was completed in May and the crop is expected in June 1923.

(*c*) Revised figure furnished by the District Forest Officer.

(*d*) Excludes amounts relating to the 'Bryant Park' transferred to the Agricultural Department.

(*e*) Of these only 86½ acres are regular teak plantations; the balance consists of palmyra, etc., cultivation in the Teri sand forests.

(*f*) Shola experimental work.

Area under artificial reproduction, 1922–23—*cont.*

District.	Area in acres.				Expenditure during the year.		Total expenditure from commencement.		Revenue during the year.	Total revenue from date of creation of plantation.
	On 1st April 1922.	Added during the year.	Excluded during the year.	Area on 31st March 1923.	Creation.	Upkeep.	Creation.	Upkeep.		
					SIXTH CIRCLE—*cont.*					
					B.—Taungya Plantations.					
					Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Mangalore, South ..	57	..	..	57	..	..	37	75	..	..
Wynaad	635	3	..	638	25	49	25	10,944	..	..
The Nilgiris ..	32	..	..	32	..	207	504	4,978	..	..
Palghat	54	..	..	54	..	..	..	234	..	..
Total ..	778	3	..	781	25	256	566	16,231	..	..
					C.—Cultural Operations.					
Mangalore, North ..	1,710	508	..	2,218	1,844	2,081	5,254	2,188	..	..
Do. South ..	(*a*) 1,754	(*b*)2,922	..	4,676	4,984	4,663	(*a*)10,649	(*a*) 9,955	..	..
Wynaad	4,617	9	..	4,626	43	71	5,661	8,669	..	..
Nilambur	..	..	..	..	..	..	..	..	..	..
The Nilgiris ..	45	2	..	47	676	362	1,700	386	..	..
Palghat	558	..	..	558	(*c*)1,279	131	11,999	1,492	..	..
Total ..	8,684	3,441	..	12,125	8,826	7,308	35,253	22,684	..	..
Grand Total, VI Circle	18,644	3,650	..	22,294	21,343	20,662	6,68,617	9,68,993	203,052	52,75,043
Grand total, Regular Plantations.	20,935	560	75	21,420	20,439	20,745	12,72,577	12,94,385	2,33,778	58,73,104
Taungya Plantations.	928	262	10	1,180	4,813	878	6,110	16,590	195	..
Cultural Operations.	84,856	10,475·5	888	94,443·5	20,620	9,095	1,59,975	52,957	225	1,738
Grand total for the Presidency.	1,06,719	11,297·5	973	117,043·5	45,872	30,218	14,38,662	13,63,932	2,34,198	58,74,842

(*a*) Revised figures furnished by the District Forest Officer have been adopted.
(*b*) Part of this area relates to the previous year but was omitted to be taken into account in the previous return.
(*c*) Relates to areas included in the previous years.

ANNUAL FORM No. 76.

Forest Department, Madras Presidency.

Outturn (in thousands of cubic feet, solid) of timber and fuel during the year 1922-23 and agency of exploitation.

ANNUAL.

Forest Department,

Outturn (in thousands of cubic feet, solid) of timber and fuel

Division.	Timber in the rough, logs.					Timber in the rough, poles.					Sawn or square timber.				
	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
						(*In thousands of cubic feet.*)									FIRST
															I. Reserved
Ganjam	94	52	34	..	180	3	28	..	..	31	..	..	3	..	3
Vizagapatam	1	1	..	..	2	..	3	..	..	3	..	..	..	..	..
Gödävari, Upper ..	21	..	..	..	21	..	..	..	..	..	..	..	..	..	..
Do. Lower ..	3	15	..	..	18	..	..	..	..	..	..	..	..	..	..
Kistna	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	119	68	34	..	221	3	31	..	..	34	..	..	3	..	3
															II. Leased
															III. Reserved
															IV. Unreserved
Ganjam	3	28	..	..	31	1	..	1	..	2	..	..	..	..	..
Vizagapatam	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gödävari, Upper ..	13	1	..	..	14	3	7	..	..	10	..	..	..	..	..
Do. Lower ..	..	62	..	..	62	..	..	..	..	..	..	..	..	..	..
Kistna	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	16	91	..	..	107	4	7	1	..	12	..	..	..	..	..
Grand total ..	135	159	34	..	328	7	38	1	..	46	..	..	3	..	3
															SECOND
															I. Reserved
Bellary	..	..	..	..	..	..	(*a*) 4	(*a*) 3	..	7	..	..	..	..	..
Anantapur	..	..	..	..	..	..	34	19	..	53	..	..	..	..	..
Guntür	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kurnool, East	12	5	1	..	18	1	1	5	..	7	3	..	..	..	3
Do. South ..	19	4	..	..	23	1	103	1	..	105	..	..	..	..	..
Do. West † ..	6	..	..	..	6	39	..	5	1	45	8	..	..	..	8
Total ..	37	9	1	..	47	41	142	33	1	217	11	..	..	..	11
															II. Leased
															III. Reserved
Bellary	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
															IV. Unreserved
Bellary	..	..	..	..	..	..	(*a*) 31	(*a*) 2	..	33	..	..	..	..	..
Anantapur	..	..	..	..	..	..	103	7	..	110	..	..	..	..	..
Guntür	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kurnool, East	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	4	..	..	4	..	..	..	..	..
Do. West ..	..	72	..	..	72	..	..	..	..	..	..	..	..	..	..
Total ..	..	72	..	..	72	..	138	9	..	147	..	..	..	..	..
Grand total ..	37	81	1	..	119	41	280	42	1	364	11	..	..	..	11
															THIRD
															I. Reserved
Cuddapah, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nellore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chingleput	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chittoor	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Vellore, North	..	6	..	..	6	..	..	..	..	..	..	..	..	..	..
Total ..	..	6	..	..	6	..	..	..	..	..	..	..	..	..	..

Note for the First Circle.

The figures are actuals except in the following cases :—

(1) *Ganjām*—Unreserved lands—Column 3.—This includes 18,360 cubic feet of timber arrived at by taking 20 cubic feet for every rupee collected.

" Purchasers under fuel.—This includes 107,160 cubic feet arrived at by taking 20 cubic feet for every half a rupee collected.

(2) *Vizagapatam*—Unreserved lands.—Value converted into outturn at 1 anna per cubic foot of timber and 6 pies per cubic foot of fuel.

(3) *Gödävari, Lower*—Unreserved lands.—Column 3.—This includes 60 units of timber obtained by conversion of lease amount under driftwood operations at 1 anna per cubic foot.

(4) *Kistna*—Unreserved lands.—Value converted into outturn at 1 anna per cubic foot and As. 2 per cubic foot in case of free grantees.

Note for Second Circle.

Reserved Forests—

(*a*) Actuals furnished by Range Officers and coupe contractors.

Unreserved lands—

(*a*) actuals, (*b*) estimates worked out from the Revenue at As. 6 a cubic foot or dead fuel.

(1) *Bellary*—The figures in column 8 under " *Unreserved lands* " is an estimate worked out on the revenue under II (*a*) from the unreserved lands. Two-thirds of the revenue was taken to I class timber and one-third to II class timber and the quantity in cubic feet was arrived at by calculating at As. 4 per cubic foot for the former and As. 2 per cubic foot for the latter as was done in previous years.

(2) *Anantapur*.—Timber is taken at Rs. 2-8-0 a cart-load = 20 cubic feet and fuel is taken at Rs. 1-4-0 a cart-load = 40 cubic feet.

Guntür—Reserved forests.—Figures in columns 18 and 28 have been estimated at 1 cubic foot per anna.

Kurnool East—(*b*) Free grants.—Column 24 estimated as noted below :—

One pole = 2 cubic feet. One kaligunja = 1 cubic foot.

FORM No. 76.

Madras Presidency.

during the year 1922–23 and agency of exploitation.

Miscellaneous.					Total timber.					Fuel.					
Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Total outturn.
(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
CIRCLE.															
Forests.															
					(In thousands of cubic feet.)										
..	..	..	..	..	97	80	37	..	214	1	274	24	..	299	513
..	..	..	..	..	1	4	..	..	5	2	143	..	..	145	150
12	..	..	..	12	33	..	..	..	33	..	..	..	..	..	33
1	23	..	..	24	4	38	..	..	42	16	1,190	..	..	1,206	1,248
1	4	..	..	5	1	4	..	..	5	6	781	..	..	787	792
14	27	..	..	41	136	126	37	..	299	25	2,388	24	..	2,437	2,736
Forests—Nil.															
Lands—Nil.															
Lands.															
..	..	..	..	..	4	28	1	..	33	5	179	..	..	184	217
..	52	1	..	53	..	52	1	..	53	..	21	..	..	21	74
8	17	5	..	30	24	25	5	..	54	11	49	..	..	60	114
..	85	9	..	94	..	147	9	..	156	..	24	..	..	24	180
..	72	12	..	84	..	72	12	..	84	..	248	..	..	248	332
8	226	27	..	261	28	324	28	..	380	16	521	..	..	537	917
22	253	27	..	302	164	450	65	..	679	41	2,909	24	..	2,974	3,653
CIRCLE.															
Forests.															
..	..	..	..	..	..	4	3	..	7	(a) 3	(a) 165	..	..	168	175
..	..	..	..	..	..	34	19	..	53	..	18	..	..	18	71
..	2	..	..	2	..	2	..	..	2	..	91	..	..	91	93
..	..	2	..	2	15	6	(b) 8	..	30	24	3	..	..	27	57
..	..	1	..	1	20	107	2	..	129	10	121	..	..	131	260
6	..	..	..	6	59	..	5	1	65	357	..	..	154	511	576
6	2	3	..	11	95	153	37	1	286	394	398	..	154	946	1,232
Forests—Nil.															
Lands—Nil.															
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lands.															
..	..	..	..	..	..	31	2	..	33	..	(b) 76	..	..	(b) 76	109
..	..	..	..	..	..	103	7	..	110	..	16	..	..	16	126
..	116	(a)30	..	146	..	116	30	..	146	..	235	..	..	235	381
..	11	2	..	13	..	11	2	..	13	..	4	..	..	4	17
..	..	..	..	..	..	4	..	..	4	..	..	..	..	..	4
..	..	..	..	..	..	72	..	..	72	..	37	..	..	37	109
..	127	32	..	159	..	337	41	..	378	..	368	..	..	368	746
6	129	35	..	170	95	490	78	1	664	394	766	..	154	1,314	1,978
CIRCLE.															
Forests.															
2	31	1	..	34	2	31	1	..	34	8	607	..	..	615	649
12	46	1	..	59	12	46	1	..	59	64	553	..	..	617	676
3	20	..	..	23	3	20	..	..	23	8	498	..	..	506	529
2	3	..	..	5	2	3	..	..	5	16	2,573	..	..	2,589	2,594
3	..	..	..	3	3	..	..	..	3	1	271	..	..	272	275
2	44	7	..	53	2	44	7	..	53	63	1,436	..	..	1,499	1,552
..	..	..	..	..	..	6	..	..	6	5	499	..	..	504	510
24	144	9	..	177	24	150	9	..	183	165	6,437	..	..	6,602	6,785

Note for the Third Circle.

Cuddapah, North.— { Reserved forests.—Actuals.
Unreserved lands.—These are estimates calculated at 1 anna per cubic foot of timber and 3 pies per cubic foot of fuel.

Cuddapah, South.— { One ton Dollwood = 40 cubic feet.
One Stack of fuel = 60 cubic feet.
One bag of charcoal = 60 cubic feet of fuel.

Cuddapah, West.— { Reserved forests.—Actuals.
Unreserved lands.—Money value was converted into cubic feet at 1 anna per cubic foot in the case of darkhast lands and 3 pies per cubic foot in the case of dead wood.

Chingleput— { Reserved forests.—Actuals.
Unreserved lands—Based, on money value Timber at As. 3 per cubic foot and fuel at 4½ pies per cubic foot.

Chittoor.—The figures except those under purchasers 'Timber and fuel' against unreserves are actuals. The excepted items are estimates calculated on the money value obtained from sale of trees on darkhast lands at 1 anna per cubic foot of timber and 3 pies per cubic foot of fuel.

Vellore. North.— { Timber —As. 2 per cubic foot
Fuel —Anna 1 do.
Palmyra tree = 25 cubic feet.

Outturn (in thousands of cubic feet, solid) of timber and fuel

Division.	Timber in the rough logs.					Timber in the rough poles.					Sawn or square timber.				
	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
															THIRD
					(*In thousands of cubic feet.*)										*II. Leased*
															III. Reserved
															IV. Unreserved
Cuddapah, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nellore	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chingleput ..	..	182	2	..	184	..	..	..	..	..	..	..	..	..	..
Chittoor ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Vellore, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	..	182	2	..	184	..	..	..	..	..	..	..	..	..	..
Grand total ..	..	188	2	..	190	..	..	..	..	..	..	..	..	..	..
															FOURTH
															I. Reserved
Vellore, South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West ..	1	11	..	..	12	..	..	..	..	..	..	..	..	..	..
Salem, East ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. North ..	..	..	..	..	..	..	..	..	..	..	6	..	..	..	6
Do. Central ..	1	..	..	..	1	..	1	..	..	1	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Total ..	2	11	..	..	13	..	1	..	..	1	7	..	..	..	7
															II. Leased
															III. Reserved
															IV. Unreserved
Vellore, South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. West ..	..	15	1	..	16	..	..	..	..	..	..	..	..	..	..
Salem, East ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. North ..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Do. Central ..	..	..	..	..	..	..	1	2	..	3	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	..	15	1	..	16	..	1	2	..	3	1	..	..	..	1
Grand total ..	2	26	1	..	29	..	2	2	..	4	8	..	..	..	8
															FIFTH
															I. Reserved
Kollegal	..	143	..	..	143	6	..	..	..	6	2	143	..	..	145
Coimbatore, North ..	..	9	..	..	9	..	..	..	..	..	8	..	..	..	8
Do. South ..	15	..	..	..	15	..	..	..	..	..	24	..	..	..	24
Madura	5	..	..	..	5	..	..	..	..	..	..	..	..	..	..
Tinnevelly	..	47	..	..	47	..	5	..	..	5	..	3	..	..	3
Total ..	20	199	..	..	219	6	5	..	..	11	34	146	..	..	180
															II. Leased
Coimbatore, South ..	142	..	..	..	142	..	..	..	..	..	..	..	..	..	..
															III. Reserved
															IV. Unreserved
Kollegal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Coimbatore, North ..	..	38	8	..	46	..	..	..	..	..	..	..	..	..	..
Madura	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tinnevelly	..	15	2	..	17	..	..	..	..	..	..	..	..	..	..
Total ..	..	53	10	..	63	..	..	..	..	..	..	..	..	..	..
Grand total ..	162	252	10	..	424	6	5	..	..	11	34	146	..	..	180

Note for the Fourth Circle.

Removals by Government Agency.—Actuals.
(Sandalwood—Factor of conversion 1 ton = 40 cubic feet.)
Free grants—Actuals.
Purchasers—timber and fuel.—Estimate based on money value collected.

Note for the Fifth Circle.

The figures are actuals except in the following cases :—
Kollegal and Coimbatore, North.—Sandalwood—Factor of conversion—2 qrs. = 1 cubic foot.
Coimbatore, North.—Agricultural implements—each implement = 1 cubic foot.
Unreserved lands.—Estimate based on money value collected.

during the year 1922-23 and agency of exploitation—*cont.*

Miscellaneous.					Total timber.					Fuel.					Total outturn.
Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	
(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)
CIRCLE—*cont.*															
Forests—Nil.									(*In thousands of cubic feet.*)						
Lands—Nil.															
Lands.															
..	11	..	..	11	..	11	..	..	11	..	70	..	..	70	81
..	1	..	..	1	..	1	..	..	1	1	7	..	..	8	9
..	27	1	..	28	..	27	1	..	28	..	230	..	..	230	258
..	32	9	..	41	..	32	9	..	41	..	55	..	..	55	96
..	..	..	..	..	..	182	2	..	184	..	193	..	..	193	377
..	160	27	..	187	..	160	27	..	187	..	240	..	..	240	427
..	134	12	..	146	..	134	12	..	146	..	80	..	..	80	226
..	365	49	..	414	..	547	51	..	598	1	875	..	..	876	1,474
24	509	58	..	591	24	697	60	..	781	166	7,312		..	7,478	8,259
CIRCLE.															
Forests.															
4	2	..	..	6	4	2	..	..	6	13	252	..	..	265	271
2	..	..	..	2	3	11	..	..	14	..	76	..	..	76	90
1	..	..	..	1	1	..	..	..	1	..	73	..	..	73	74
..	..	..	..	..	6	..	..	..	6	1	12	..	..	13	19
..	..	..	..	..	1	1	..	..	2	..	36	..	..	36	38
..	1	..	..	1	1	1	..	..	2	2	289	..	..	291	293
7	3	..	..	10	16	15	..	..	31	16	738	..	..	754	785
Forests—Nil.															
Lands—Nil.															
Lands.															
..	83	28	..	111	..	83	28	..	111	..	65	..	..	65	176
..	..	..	..	..	..	16	1	..	16	..	8	..	..	8	24
..	154	3	..	157	..	154	3	..	157	1	105	..	..	106	263
..	25	1	..	26	1	25	1	..	27	..	7	..	..	7	34
..	77	..	..	77	..	78	2	..	80	..	11	..	..	11	91
..	277	2	..	279	..	277	2	..	279	..	89	..	..	89	368
..	616	34	..	650	1	632	37	..	670	1	285	..	..	286	956
7	619	34	..	660	17	647	37	..	701	17	1,023	..	..	1,040	1,741
CIRCLE.															
Forests.															
..	271	..	..	271	8	557	..	..	565	1	2	..	..	3	568
3	..	..	..	3	11	9	..	..	20	..	1,147	..	..	1,147	1,167
2	4	..	..	6	41	4	..	..	45	..	86	..	..	86	131
..	69	..	..	69	5	69	..	..	74	1	549	..	..	550	624
..	..	..	..	..	..	55	..	..	55	1	344	..	..	345	400
5	344	..	..	349	65	694	..	..	759	3	2,128	..	..	2,131	2,890
Forests.															
..	..	..	..	..	142	..	..	..	142	..	..	..	..	..	142
Lands—Nil.															
Lands.															
..	22	..	..	22	..	22	..	..	22	..	2	..	..	2	24
..	..	..	..	..	..	38	8	..	46	..	35	..	..	35	81
..	121	1	..	122	..	121	1	..	122	..	135	..	..	135	257
..	..	..	..	..	..	15	2		17	..	187	1	..	188	205
..	143	1	..	144	..	196	11		207	..	359	1	..	360	567
5	487	1	..	493	207	890	11	..	1,108	3	2,457	1	..	2,491	3,599

Outturn (in thousands of cubic feet, solid) of timber and fuel

Division.	Timber in the rough, logs.					Timber in the rough, poles.					Sawn or square timber.				
	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.	Government.	Purchasers.	Free-grantees.	Right-holders.	Total	Government.	Purchasers.	Free-grantees.	Right-holders.	Total.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
															SIXTH
															I. Reserved
Mangalore, North ..	37	..	..	..	37	..	..	..	..	..	..	..	..	..	..
Do. South ..	47	..	..	..	47	4	..	..	..	4	9	..	..	..	9
Wynaad	..	..	..	..	..	1	..	..	..	1	74	16	..	..	90
Nilambur	1	5	..	..	6	47	..	..	..	47	..	..	..	..	..
The Nilgiris	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Palghat	3	20	..	..	23	..	..	..	..	..	..	..	..	..	..
Exploitation	37	..	..	..	37	36	..	..	..	36	..	..	..	..	..
Total ..	125	25	..	..	150	88	..	..	..	88	83	16	..	..	99
															II. Leased
Nilambur	216	..	..	..	216	33	..	..	..	33	..	..	..	..	..
															III. Reserved
The Nilgiris	..	..	..	..	..	84	..	..	..	84	..	..	..	..	..
															IV. Unreserved
Mangalore, North ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Do. South ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wynaad	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nilambur	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
The Nilgiris	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Palghat	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total, VI Circle ..	341	25	..	..	366	205	..	..	..	205	83	16	..	..	99
Grand total, Presidency.	677	731	48	..	1,456	259	325	45	1	630	136	162	3	..	301

Note for Sixth Circle.

Reserved forests, leased forests and lands—
Government Agency—Actuals.
Purchasers—Timber.—Actuals in Wynaad and in Nilambur—Other divisions—based on contractor's accounts or on money value.
Fuel— Do. do. do. do.
Unreserved lands.—Estimates based on money value.

during the year 1922-23 and agency of exploitation—*cont.*

Miscellaneous.					Total timber.					Fuel.					
Government. (17.)	Purchasers. (18)	Free-grantees. (19)	Right-holders. (20)	Total. (21)	Government. (22)	Purchasers. (23)	Free-grantees. (24)	Right-holders. (25)	Total. (26)	Government. (27)	Purchasers. (28)	Free-grantees. (29)	Right-holders. (30)	Total. (31)	Total outturn. (32)
Circle.															
Forests.															
..	45	..	..	45	37	45	..	..	82	41	1,615	..	..	1,656	1,738
..	3	..	..	3	60	3	..	..	63	437	99	..	..	536	599
..	6	..	..	6	75	22	..	..	97	..	..	..	..	..	97
4	..	1	..	5	52	5	1	..	58	..	..	..	..	..	58
2	1	..	..	3	2	1	..	..	3	158	271	..	..	429	432
..	..	..	..	..	3	20	..	..	23	4	935	..	..	939	962
..	..	..	..	..	73	..	..	..	73	..	61	..	..	61	134
6	55	1	..	62	302	96	1	..	399	640	2,981	..	..	3,621	4,020
Forests.															
33	..	..	..	33	282	..	..	..	282	1	..	..	..	1	283
Lands.															
..	8	..	..	8	84	8	..	..	92	..	..	..	..	..	92
Lands.															
..	399	..	5	404	..	399	..	5	404	..	556	..	..	556	960
..	52	..	4	56	..	52	..	4	56	..	44	..	..	44	100
..	2	..	..	2	..	2	..	..	2	..	5	..	..	5	7
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	11	..	..	11	..	11	..	..	11	..	36	..	..	36	47
..	66	4	..	70		66	4	..	70	..	153	..	..	153	223
..	530	4	9	543	..	530	4	9	543	..	794	..	..	794	1,337
39	593	5	9	646	668	634	5	9	1,316	641	3,775	..	..	4,416	5,732
103	2,590	160	9	2,862	1,175	3,808	256	10	5,249	1,262	18,272	25	154	19,713	24,962

ROYAL ASIATIC SOCIETY LIBRARY OF THE BOMBAY BRANCH OF THE

ANNUAL FORM No. 77.

Forest Department, Madras Presidency.

Outturn of minor forest produce during the year 1922–23.

Circle.	Description of produce.	Produce removed or utilized					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value.	Value.	Value.	Value.
	Reserved forests.		Rs.	Rs.	Rs.	Rs.	Rs.
First Circle	Bamboos	32,880	371	78,344	557	..	79,272
	Grazing and fodder grass ..	..	..	46,658	11,975	403	59,036
	Other produce.						
	Grass (hay, thatch, korai, etc.).	3,656	19	1,366	6	..	1,391
	Tamarind, soapnuts, galnuts, nux-vomica, shekoi, etc.	..	..	11,503	..	500	12,003
	Horns, honey wax, resin, gum, skins, etc.	..	..	323	..	..	323
	Tangedu, etc., barks and fibres.	182	2	3,988	1	..	3,991
	Stone, gravel, earth, etc. ..	10,582	12	179	..	..	191
	Date and palmyra leaves, stalks, etc.	..	..	3	8	..	11
	Miscellaneous including, tree-tapping and tree-owners' fees.	..	..	531	..	..	531
	Total, minor produce ..	14,420	33	17,893	15	500	18,441
	Total, Reserved forests ..	..	404	1,42,895	12,547	903	1,56,749
	Reserved lands.						
	Bamboos	630	26	57,320	..	..	57,346
	Grazing and fodder grass ..	..	..	..	..	..	..
	Other produce.						
	Grass (hay, thatch, korai, etc.)	..	..	103	..	..	103
	Tamarind, soapnuts, etc. ..	..	..	7,410	..	..	7,410
	Horns, honey, etc.	..	..	153	..	..	153
	Leaves for platters	..	..	376	..	..	376
	Total, minor produce ..	..	..	8,042	..	..	8,042
	Total, Reserved lands ..	630	26	65,362	..	..	65,388
	Unreserved lands.						
	Bamboos	5,310	101	4,631	47	..	4,779
	Grazing and fodder grass ..	..	..	390	..	..	390
	Other produce.						
	Grass (tharbi, korai, etc.) ..	3,928	32	248	3	..	283
	Tamarind, soapnuts, galnuts, nux-vomica, shekoi, etc.	97	52	11,077	..	..	11,129
	Horns, honey, wax, gum, resin, skins, etc.	..	..	497	..	..	497
	Tangedu, etc., barks and fibres.	164	40	1,893	..	..	1,933
	Stone, gravel, earth, etc. ..	4,078	3	1,671	12	..	1,686
	Leaves for platters	..	..	19	..	..	19
	Date and palmyra leaves, stalks, etc.	..	..	37	239	..	276
	Manure leaves and thorns ..	..	..	16,269	..	..	16,269
	Miscellaneous, including tree-tapping and tree-owners' fees.	.	..	12,116	..	..	12,116
	Total, minor produce ..	8,267	127	43,827	254	..	44,208
	Total, Unreserved lands ..	..	228	48,848	301	..	49,377
	Abstract for the circle.						
	Bamboos in number	38,820	498	1,40,295	604	..	1,41,397
	Grazing and fodder grass ..	..	..	47,048	11,975	403	59,426
	Other produce in quarters ..	22,687	160	69,762	269	500	70,691
	Grand total, First Circle ..	..	658	2,57,105	12,848	903	2,71,514

Outturn of minor forest produce during the year 1922-23—*cont.*

Circle.	Description of produce.	Produce removed or utilized					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value.	Value.	Value.	Value.
		NO.	RS.	RS.	RS.	RS.	RS.
Second Circle ..	Bamboos	707,964	14,961	28,766	470	..	44,197
	Grazing and fodder grass ..	..	..	2,67,544	42	3,625	2,71,211
	Grass (hay, thatch and grass) ..	..	..	423	33	..	456
	Tamarind, soapnuts and nux-vomica.	15,414	7,919	13,628	..	..	21,547
	Stone, gravel and earth ..	..	..	14,647	..	..	14,647
	Date, palmyra and platter leaves.	446	130	996	1,126	..	2,252
	Manure leaves and thorns ..	..	..	4,581	..	..	4,581
	Thummari leaves	..	..	739	..	..	739
	Honey, wax, resin, gum and galnuts.	..	..	324	..	..	324
	Tangedu fibre and seeds	* 19	..	88,173	..	..	88,173
	Miscellaneous—Tree tapping fees and amaroi.	..	..	97,506	..	..	97,506
	Total ..	15,879	8,049	2,21,017	1,159	..	2,30,225
	Grand total ..	73,843	23,010	5,17,327	1,671	3,625	5,45,633
Third Circle ..	Bamboos	26,955	224	34,056	370	..	34,650
	Grazing and fodder grass ..	..	..	2,38,119	174	123	2,38,416
		QRS.					
	Grass (thatch, korai, etc.) ..	5,107	264	256	2	..	522
	Honey, wax, etc..	..	..	..	..	..	..
	Tangedu, etc., barks	517	1,670	33,773	..	..	35,443
	Date and palmyra leaves ..	580	14	2,800	351	..	3,165
	Stones, gravel and earth ..	1,350	1	6,033	68	..	6,102
	Manure leaves, tooki and plate leaves, etc.	..	..	17,605	..	..	17,605
	Tamarind, soapnuts and nux-vomica.	6,023	12,075	28,526	..	..	40,601
	Other miscellaneous produce including tree-owners' fees.	2,949	4,931	66,448	52	..	71,431
	Total ..	16,526	18,955	1,55,441	473	..	1,74,869
	Total of grass and grazing and minor produce.	..	18,955	3,93,560	647	123	4,13,285
Fourth Circle ..		NO.					
	Bamboos	639	68	1,25,742	9	..	1,25,819
	Grass and grazing	..	..	2,04,138	..	81	2,04,219
		QRS.					
	Grass (thatch, korai, etc.) ..	..	..	2,536	..	..	2,536
	Tamarind, soapnuts galnuts, nux-vomica, etc.	1,667	2,878	22,872	..	..	25,750
	Avaram, vembadam, etc., barks.	..	..	26,725	..	..	26,725
	Stone, gravel, earth, etc. ..	..	..	8,284	..	..	8,284
	Manure leaves, etc.	..	..	40,716	..	..	40,716
	Date, palmyra, etc., leaves ..	..	..	1,178	65	..	1,243
	Honey, wax, tc.	..	..	50	..	..	50
	Miscellaneous including tree-owners' fees.	517 † 109	383	61,001	..	..	61,384
	Total ..	2,184 † 109	3,261	1,63,362	65	..	1,66,688
	Grand total ..	..	3,329	4,93,242	74	81	4,96,726
Fifth Circle ..	Bamboos	2,586	65	41,810	92	..	41,967
	Grazing and fodder grass ..	..	..	1,31,607	..	1,341	1,32,948

* These seeds relate to sandal seeds, etc., received from South Vellore and Salem districts; collected by department without any cost to Government.

† 109 c.ft. of rough stone metal.

Outturn of minor forest produce during the year 1922-23—*cont.*

Circle.	Description of produce.	Produce removed or utilized					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value.	Value.	Value.	Value.
	Other produce.	QRS.	RS.	RS.	RS.	RS.	RS.
Fifth Circle—*cont.*	Grass (thatch, korai, etc.) ..	991	8	6,939	..	..	6,947
	Dammer, turmeric, pepper, cardamoms, etc.	..	..	14,843	..	..	14,843
	Tamarind, soapnuts, galnuts, nux-vomica, shekoi, etc.	37	2	17,211	..	..	17,213
	Horns, honey, wax, gum, resin, skin, etc.	34	270	2,676	..	..	2,946
	Avaram, vembadam, etc., barks and fibres.	..	..	14,740	..	..	14,740
	Stones, earth, gravel, etc. ..	..	..	1,312	..	..	1,312
	Manure leaves, thorns, etc. ..	..	..	7,137	..	..	7,137
	Date and palmyra leaves ..	..	..	9,135	..	1,070	10,205
	Elephant tusk	9	1,950	272	..	..	2,222
	Miscellaneous	..	..	16,160	..	..	16,160
	Total ..	1,071	2,230	90,425	..	1,070	93,725
	Unreserved lands.						
	Bamboos	.	..	..	134	..	134
	Other produce.						
	Miscellaneous	..	..	9,187	..	..	9,187
	Gravel, stones, earth, etc. ..	..	..	2,743	..	..	2,743
	Date and palmyra leaves ..	..	..	..	..	..	..
	Total ..	..	..	11,930	..	..	11,930
	Abstract for the Fifth Circle.						
	Bamboos	2,586	65	41,810	226	..	42,101
	Grazing and fodder grass ..	..	..	1,31,607	..	1,341	1,32,948
	Other produce	1,071	2,230	1,02,365	..	1,070	1,05,655
	Grand total ..	..	2,295	2,75,772	226	2,411	2,80,704
Sixth Circle ..	*Reserved forests.*	NO.					
	Bamboos	4,672	599	6,413	12	..	7,024
	Grazing and fodder grass ..	..	.	34,947	..	..	34,947
	Other produce.						
	Honey, wax, etc.	..	..	1,350	..	..	1,350
	Canes and reeds	422 QRS.	72	1,220	1	..	1,293
	Tusks	4	993	..	..	..	993
	Blue gum leaves and seeds ..	294	750	66	..	..	816
	Gums and resin	2	18	..	..	..	18
	Avaram, etc., bark	..	..	706	..		706
	Grass (thatch, etc.)	..	4	487	22	..	513
	Stone, gravel, etc.	..	..	328	513	..	841
	Miscellaneous	..	..	13,029	..	..	13,029
	Tree-owner's fees	..	..	5	..	..	5
	Total ..	300	1,837	17,191	536	..	19,564
	Reserved lands.						
	Grazing and fodder grass ..	..	..	456	674	..	1,130
	Other produce.						
	Grass, thatch, etc.	..	..	30	13	..	43
	Honey, and wax	11	104	..	..	..	104
	Tusks and horns	19	350	..	..	..	350
	Total ..	30	454	30	13	..	497

Outturn of minor forest produce during the year 1922-23—*cont.*

Circle.	Description of produce.	Produce removed or utilized					
		By Government agency.		By purchasers.	By free grantees.	By right-holders.	Total.
		Quantity.	Value.	Value.	Value.	Value.	Value.
	Leased forests.	NO.	RS.	RS.	RS.	RS.	RS.
	Bamboos	144,386	12,692	1	..	..	12,693
	Miscellaneous	*	259	135	..	..	391
	Unreserved lands.						
	Bamboos	8	..	316	..	..	316
	Stone, gravel, etc.	..	..	532	90	..	622
	Avaram bark	..	..	93	..	..	93
	Miscellaneous	..	51	10,764	..	..	10,815
	Tree owner's fees	..	..	900	..	..	900
Sixth Circle—*cont.*	Total ..	*	51	12,289	90	..	12,430
	Abstract for the Sixth Circle.						
	Bamboos	149,066	13,291	6,730	12	..	20,033
	Grazing and fodder grass ..	..	..	35,403	674	..	36,077
	Other minor forest produce ..	QRS. 330	2,598	29,645	639	..	32,882
	Grand total ..	..	15,889	71,778	1,325	..	88,992
	Bamboos	926,030	29,107	3,77,399	1,691	..	4,08,197
Total, Presidency ..	Grazing and fodder grass ..	..	..	9,23,859	12,865	5,573	9,42,297
	Other produce	58,786	35,253	7,41,582	2,605	1,570	7,81,010
	Grand total, Presidency ..	..	64,360	20,42,840	17,161	7,143	21,31,504

* Represents value of coconuts, etc.

ANNUAL FORM No. 78.

Forest Department, Madras Presidency.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1922–23.

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
TIMBER (IN THOUSANDS OF CUBIC FEET).					
First Circle.					
Ganjam	365	101	466	209 (a) 2 (b) 3	252
Vizagapatam	1	1	2	1 (b) 1	..
Gōdāvari, Upper	44	57	101	83 (a) 3 (b) 2	13
Do. Lower	1	4	5	1 (a) 4	..
Kistna	..	1	1	1	..
Total ..	411	164	575	310	265
Second Circle.					
Bellary	..	..	..	..	..
Anantapur	..	..	..	..	..
Guntūr	..	..	..	..	..
Kurnool, East	2	16	18	14	4
Do. South	2	20	22	22	..
Do. West	73	59	132	(a) 1 (b) 1 (c) 102	28
Total ..	77	95	172	140	32
Third Circle.					
Cuddapah, North	..	2	2	2	..
Do. South	..	12	12	12	..
Do. West	1	3	4	4	..
Nellore	..	2	2	2	..
Chingleput	..	3	3	3	..
Chittoor	1	2	3	2	1
Vellore, North	..	..	..	..	..
Total ..	2	24	26	25	1
Fourth Circle.					
Vellore, South	1	4	5	3	2
Do. West	1	3	4	3	1
Salem, East	..	1	1	1	..
Do. North	2	7	9	6	3
Do. Central	..	1	1	1	..
Do. South	1	1	2	1	1
Total ..	5	17	22	15	7
Fifth Circle.					
Kollegal	2	8	10	7 * 2	1
Coimbatore, North	2	* 11 2	15	14	1
Do. South	96	183	279	186	93
Madura	1	5	6	5	1
Total ..	101	209	310	214	96
Sixth Circle.					
Mangalore, North	1	37	38	20 (c) 1 (d) 1	16
Do. South	85	60	145	72 (d) 17	56
Wynaad	67	75	142	34 (c) 1 (d) 1	106
Nilambur	(a) 393	335	728	246 (c) 27 (d) 1	454
The Nilgiris	6	86	92	50	42
Palghat	9	3	12	4	8
Exploitation	69 (b) — 45	73	97	76	21
Total ..	585	669	1,254	551	703
Grand total, Presidency ..	1,181	1,178	2,359	1,255	1,104

First Circle—(a) Used departmentally. (b) Written off. (c) Otherwise disposed of.
Second Circle—(a) Written off. (b) Used departmentally. (c) Otherwise disposed of.
* Fifth Circle—Transferred from Kollegal to Coimbatore North.
Sixth Circle—(a) Based on stock-taking during the year. (b) Errors corrected.
(c) Used departmentally. (d) Written off.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1922–23—*cont.*

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
FUEL (IN THOUSANDS OF CUBIC FEET).					
First Circle.					
Ganjām	7	6	13	8 (*a*) 1 (*b*) 2	2
Vizagapatam	4	2	6	5	1
Gōdāvari, Upper	5	11	16	8 (*a*) 5	3
Do. Lower	3	16	19	6	13
Kistna	..	6	6	6	..
Total	19	41	60	41	19
Second Circle.					
Bellary	..	3	3	3	..
Anantapur	..	..	..	..	..
Guntūr	..	..	..	..	..
Kurnool, East	74	24	98	59	39
Do. South	..	10	10	10	..
Do. West	2,622	357	2,979	(*a*) 60 (*b*) 1,141	1,778
Total	2,696	394	3,090	1,273	1,817
Third Circle.					
Cuddapah, North	..	8	8	6	2
Do. South	4	65	69	65	4
Do. West	..	8	8	8	..
Nellore	1	16	17	16	1
Chingleput	..	1	1	1	..
Chittoor	2	63	65	55	10
Vellore, North	..	5	5	5	..
Total	7	166	173	156	17
Fourth Circle.					
Vellore, South	..	13	13	11	2
Do. West	..	..	..	..	..
Salem, East	..	1	1	..	1
Do. North	..	1	1	1	..
Do. Central	..	..	..	..	..
Do. South	5	2	7	7	..
Total	5	17	22	19	3
Fifth Circle.					
Kollegal	..	1	1	..	1
Madura	1	1	2	2	..
Tinnevelly	..	1	1	1	..
Total	1	3	4	3	1
Sixth Circle.					
Mangalore, North	7	41	48	48	..
Do. South	51 (*b*) — 17	437	471	371 (*d*) 5	95
Wynaad	..	..	..	..	..
Nilambūr	(*a*) 2	1	3	2	1
The Nilgiris	231	158	389	240 (*c*) 2 (*d*) 5	142
Palghat	..	..	..	..	..
Exploitation	2	..	2	2	..
Total	276	637	913	675	238
Grand total, Presidency	3,004	1,258	4,262	2,167	2,095

Note for First Circle.—(*a*) Used departmentally.
(*b*) Written off.

Note for Second Circle.—(*a*) Written off.
(*b*) Used departmentally.

Note for Sixth Circle.—(*a*) Based on stock-taking during the year.
(*b*) Errors corrected.
(*c*) Used departmentally.
(*d*) Written off.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1923-23—*cont.*

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
BAMBOOS (IN NUMBER).					
First Circle.					
Ganjam	..	14,570	14,570	(a) 14,570	..
Vizagapatam	..	500	500	348	152
Godavari, Upper	..	11,760	11,760	(a) 11,760	..
Do. Lower	1,850	11,990	13,840	(a) 13,840	..
Kistna	..	..	..	..	..
Total ..	1,850	38,820	40,670	40,518	152
Second Circle.					
Bellary	..	..	..	..	..
Anantapur	..	..	..	..	..
Guntur	..	63	63	63	..
Kurnool, East	29,859	156,047	185,906	(a) 7,090 (c) 167,628	11,188
Do. South	..	626	626	626	..
Do. West	40,948	551,228	592,176	(a) 591,243 (b) 800	133
Total ..	70,807	707,964	778,771	767,450	11,321
Third Circle.					
Cuddapah, North	1,195	6,500	7,695	7,695	..
Do. South	1,000	4,421	5,421	5,421	..
Do. West	250	2,706	2,956	2,956	..
Nellore	..	20	20	..	20
Chingleput	..	..	..	..	..
Chittoor	140	12,975	13,115	12,955	160
Vellore, North	..	333	333	333	..
Total ..	2,585	26,955	29,540	29,360	180
Fourth Circle.					
Vellore, South	..	62	62	62	..
Do. West	..	..	..	..	..
Salem, East	..	102	102	102	..
Do. North	105	475	580	515	65
Do. Central	..	..	..	..	..
Do. South	..	..	..	..	..
Total ..	105	639	744	679	65
Fifth Circle.					
Kollegal	..	202	202	202	..
North Coimbatore	66	2,349	2,415	1,392	1,023
Tinnevelly	..	35	35	35	..
Total ..	66	2,586	2,652	1,629	1,023
Sixth Circle.					
Mangalore, North	..	150	150	150	..
Do. South	1,577	323	1,900	100 (b) 315 (c) 1,477	8
Wynaad	..	462	462	462	..
Nilambur	(a) 2,310	198,424	200,734	191,327 (b) 6,896 (c) 1,108	1,403
Palghat	113	290	403	401	2
Total ..	4,000	199,649	203,649	202,236	1,413
Grand total, Presidency ..	79,413	976,613	1,056,026	1,041,872	14,154

Note for First Circle.—(a) Used departmentally.

Note for Second Circle.—(a) Written off.
(b) Used departmentally.
(c) Otherwise disposed of.

Note for Sixth Circle.—(a) Based on stock-taking during the year.
(b) Used departmentally.
(c) Written off.

Account of timber, fuel, bamboos and minor produce cut or collected by Government Agency and brought to depot, sold locally or otherwise disposed of during 1922-23—*cont.*

Name of district.	Balance at commencement of the year in forest and sale depots.	Received during the year.	Total.	Disposed of during the year.	Balance in hand at close of the year in forest and sale depots.
MINOR PRODUCE (IN QUARTERS OF 28 LB.).					
First Circle.					
Ganjām	..	16,618	16,618	(*a*) 16,618	..
Vizagapatam	1,094	97	1,191	42 (*a*) 1,080	69
Gōdāvari, Upper	1,418	5,764	7,182	1,000 (*a*) 5,935	247
Do. Lower	2,916	208	3,124	(*a*) 3,044	80
Kistna	1	..	1	1	..
Total	5,429	22,687	28,116	27,720	396
Second Circle.					
Bellary	1,600,008	9	1,600,017	109,693	1,490,324
Anantapur	10	1	11	1½	9½
Guntūr	* 12	10	22	18	4
Kurnool, East	1,134	7,847	8,981	(*a*) 412 (*b*) 200 (*c*) 5,912	2,457
Do. South	..	..	..	..	..
Do. West	897	8,012	8,909	(*b*) 5½ (*c*) 4,134½	4,769
Total	1,602,061	15,879	1,617,940	120,376½	1,497,563½
Third Circle.					
Cuddapah, North	(*a*) 290	4,378	4,668	4,090	578
Do. South	360	269	629	629	..
Do. West	4	112	116	89	27
Nellore	1,488	10,793	12,281	10,995	1,286
Chingleput	..	..	..	..	..
Chittoor	78	213	291	264	27
Vellore, North	264	761	1,025	306	719
Total	2,484	16,526	19,010	16,373	2,637
Fourth Circle.					
Vellore, South	217	1,765	1,982	1,879	103
Do. West	446	337 109†	783 109†	671	112 109†
Salem, East	..	..	..	..	..
Do. North	64	30	94	65	29
Do. Central	11	49	60	40	20
Do. South	23	3	26	4	22
Total	761	2,184 109†	2,945 109†	2,65	286 109†
Fifth Circle.					
Kollegal	31	34	65	61	4
North Coimbatore	..	991	991	987	4
South Coimbatore	1	9	10	10	..
Madura	4	37	41	40	1
Tinnevelly	..‡	..	..‡	..‡	..
Total	36	1,071	1,107	1,098	9
Sixth Circle.					
Mangalore, North	1	..	1	..	..
Do. South	3	3*	6	6	..
Wynaad	4	3	7	5	2
The Nilgiris	63	324	387	127 (*a*) 86 (*b*) 1	173
Total	71	330	401	226	17!
Grand total, Presidency	1,610,842	58,677 109†	1,669,519 109†	168,452½	1,501,066½ 109†

Note for First Circle.—(*a*) Used departmentally.

Note for Second Circle.—(*a*) Written off.
(*b*) Used departmentally.
(*c*) Otherwise disposed of.
* The difference between the closing balance of last year and the opening balance of the present return against Guntūr district is due to the adoption of correct figures as per form 10, as reported by the District Forest Officer, Guntūr.

Note for Third Circle.—(*a*) Revised figure.

Note for Fourth Circle.—† 109 cubic feet of rough stone metal.

Note for Fifth Circle.—‡ Represents seeds of different species.

Note for Sixth Circle.—* Elephant tusks 88 lb. sent to Coimbatore for sale and subsequently transferred to Madras Forest College, Museum.
(*a*) Used departmentally.
(*b*) Written off

ANNUAL FORM No. 79.

Forest Department, Madras Presidency.

Statement showing the value of timber and other produce at sale depots for the year 1922-23.

District.	Description of timber or produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.	
		Number.	Cubic feet.	Value	Number.	Cubic feet.	Value.	In favour of the year.	Against the year.
	First Circle.			RS.			RS.	RS.	RS.
Ganjam ..	Timber	..	198	141	..	..	..	..	141
	Second Circle.								
Bellary ..	Timber	..	..	..	..	..	..	..	..
	Fuel	..	..	..	..	..	..	..	..
	Minor produce ..	..	..	..	..	..	..	..	..
Anantapur ..	....	..	..	..	..	..	..	..	..
Guntur ..	....	..	..	..	..	..	..	..	..
Kurnool, East.	....	..	..	..	..	..	..	..	..
Kurnool, South.	Timber	..	2,116	1,058	..	597	298	..	760
	Fuel	..	..	..	..	..	..	..	..
	Minor forest produce.	..	..	..	..	..	..	..	..
Kurnool, West.	....	..	..	..	..	..	..	..	..
	Third Circle.								
Nellore ..	Timber	..	..	..	..	..	..	..	..
	Fuel	..	1,270	79	..	1,365	87	8	..
	Bamboos	..	..	..	20	..	·2	2	..
	Minor forest produce.	QRS. 1,488	..	(a) 4,982	QRS. 1,286	..	2,614	..	2,368
Vellore, North.	Timber	..	..	..	..	..	..	..	..
	Fuel	..	..	..	..	..	..	..	..
	Minor forest produce.	QRS. 264	..	(a) 132	QRS. 719	..	1,038	906	..
Total value.	....	..	..	5,193	..	..	3,741	..	1,452
	Fourth Circle.								
Vellore, South.	Timber	..	..	..	..	..	..	..	..
Vellore, West.	Timber	..	..	..	..	26	816	816	..
Salem, East ..	Timber	..	16	561	..	..	..	..	561
Salem, North.	Timber	..	2,120	26,286	..	3,152	39,459	13,173	..
	Bamboos ..	NO. 105	..	3	NO. 65	..	3	..	..
	Minor forest produce.	QRS. 63	..	115	QRS. 29	..	111	..	4
Salem, Central.	Timber	..	..	31	..	235	4,450	4,419	..
	Minor forest produce.	..	..	..	QRS. 20	..	37	37	..
Salem, South.	Timber	..	270	482	..	..	..	..	482
Total value.	....	..	..	27,478	..	..	44,876	17,398	..
	Fifth Circle.								
Coimbatore, North.	Timber	..	1,825	24,808	..	761	15,024	..	9,784
	Fuel	..	..	..	..	..	..	..	..
	Bamboos	66	..	1	1,023	..	15	14	..
	Minor produce ..	..	..	..	QRS. 4	..	2	2	..
Coimbatore, South.	Timber	..	38,381	56,785	..	41,754	52,213	..	4,572
	Minor produce ..	QR. 1	..	214	(b)	..	65	..	149

(a) Revised figure. (b) Less than a quarter.

Forest Department, Madras Presidency—cont.

Statement showing the value of timber and other produce at sale depots for the year 1922-23—*cont.*

District.	Description of timber or produce.	On hand at commencement of the year.			On hand at close of the year.			Difference in value.	
		Number.	Cubic feet.	Value.	Number.	Cubic feet.	Value.	In favour of the year.	Against the year.
	Fifth Circle—cont.			Rs.			Rs.	Rs.	Rs.
Madura ..	Timber	..	1,226	418	..	1,304	399	..	28
	Fuel	..	1,260	79	..	360	23	..	56
	Minor produce ..	QRS. 3	..	2	QR. 1	..	1	..	1
Tinnevelly ..	Timber	..	248	41	..	81	63	22	..
	Fuel	..	191	19	..	..	..	..	19
	Minor produce ..	*	..	2	..	..	..	..	2
	Sixth Circle.								
Mangalore, North.	Timber	..	16	191	..	..	..	..	191
Mangalore, South.	Timber	..	37,364	† 37,384	..	29,690	32,893	..	4,491
	Fuel	..	..	..	..	..	..	..	..
Wynaad ..	Timber	..	..	..	..	23,201	24,364	24,364	..
Nilambur	Timber	..	11,978	15,745	..	1,22,340	59,696	43,951	..
	Fuel	.	1,694	268	..	780	297	29	..
	Bamboos	2,308	..	50	429	..	9	..	41
	Minor Forest produce (canes).	..	..	..	60	..	2	2	..
The Nilgiris.	Timber	..	6,000	6,000	..	42,000	48,000	42,000	..
	Fuel	..	35,000	5,584	..	1,42,000	19,000	13,416	..
	Minor forest produce.	QRS. 63	..	620	QRS. 173	..	250	..	370
Forest Exploitation division.	Timber	..	(*a*) 10,501	876	..	3,084	3,173	2,297	..
	Fuel	..	..	..	..	(*b*) 800	70	70	..
	ABSTRACT.								
First Circle.	Timber	..	198	141	..	..	..	..	141
Second Circle.	Timber	..	2,116	1,058	..	597	298	..	760
	Fuel	..	..	..	..	..	..	..	..
	Minor produce ..	..	..	..	..	..	..	..	..
	Total value ..	..	2,116	1,058	..	597	298	..	760
Third Circle.	Timber	..	..	..	..	..	..	..	..
	Fuel	..	1,270	79	..	1,365	87	8	..
	Bamboos	..	..	..	20	..	2	2	..
	Minor forest produce.	1,752	..	5,114	2,005	..	3,652	..	1,462
	Total value ..	..	..	5,193	..	..	3,741	..	1,452
Fourth Circle.	Timber	..	2,406	27,360	..	3,413	44,725	18,408	1,043
	Bamboos	105	..	3	65	..	3	..	..
	Minor forest produce.	63	..	115	79	..	148	37	4
	Total value ..	..	..	27,478	..	..	44,876	17,398	..
Fifth Circle.	Timber	..	41,680	82,052	..	43,900	67,690	..	14,362
	Fuel	..	1,451	98	..	360	23	..	75
	Bamboos	66	..	1	1,023	..	15	14	..
	Minor produce ..	QRS. 4	..	218	QRS. 5	..	68	..	150
	Total value ..	..	..	82,369	..	..	67,796	..	14,573
Sixth Circle.	Timber	..	65,853	60,196	..	2,20,315	1,68,126	1,07,930	..
	Fuel	..	36,694	5,852	..	1,43,580	19,367	13,515	..
	Bamboos	2,308	..	50	429	..	9	..	41
	Minor forest produce.	QRS. 63	..	620	QRS. 173	..	252	..	368
	Total value ..	..	..	66,718	..	..	1,87,754	1,21,036	..
	Grand total, Presidency.	..	..	1,82,957	..	..	3,04,465	1,21,508	..

* Represents seeds of different species.

† Error corrected. (*a*) Rejected timber not shown in the last year's return.

(*b*) Timber pieces and rejections in the depot of Olavakot, not shown in under fuel in form Nos. 76 and 78.

ANNUAL

Forest Department,

Summary of revenue of the different

Budget heads.	First Circle.											
	Direction.	Ganjam.	Vizagapatam.	Godavari, Lower.	Kistna.	Total.	Vizagapatam Agency.	Godavari, Upper Agency.	Godavari, Lower Agency.	Parlakimedi Maliahs.	Agency Total.	Grand total.
Receipts.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
I. Timber and other produce removed from the forests by Government Agency—												
(*a*) Timber	..	26,603	1,064	2	..	27,669	..	38,042	90	1,469	39,601	67,270
(*b*) Firewood and charcoal ..	..	105	70	339	52	566	..	418	..	2,175	2,593	3,159
(*c*) Bamboos	..	..	..	..	..	..	..	..	..	..	..	..
(*d*) Sandalwood	..	..	..	..	..	..	..	..	..	..	..	..
(*e*) Grass and other minor produce.	..	..	24	..	..	24	..	..	..	132	132	156
II. Timber and other produce removed from the forests by consumers or purchasers—												
(*a*) Timber	..	4,095	4,002	5,328	4,261	17,686	..	5,784	29,912	2,940	38,636	56,322
(*b*) Firewood and charcoal ..	2	37,574	6,787	43,973	27,502	1,15,838	1	438	2,745	3,802	6,986	1,22,824
(*c*) Bamboos	..	6,049	10,614	4,607	7,360	28,530	3,050	32,945	75,837	2,806	1,14,638	1,43,168
(*d*) Grazing and fodder grass..	..	9,225	4,222	4,045	13,326	30,818	480	7,026	8,724	1,153	17,383	48,201
(*e*) Other produce	71	1,615	4,170	7,746	13,549	27,151	4,391	983	13,807	12,652	31,833	58,984
(*f*) Rents for trees tapped ..	..	1,530	1,136	9,236	15,974	27,876	..	..	300	..	300	28,176
(*g*) Other items	..	..	..	..	..	..	..	..	..	..	..	..
(*h*) Commutation	..	..	..	..	..	..	..	..	..	321	321	321
III. Confiscated drift and waif-wood ..	..	345	25	2,807	124	3,301	8	2,050	1,489	15	3,562	6,863
IV. Revenue from forest not managed by Government—												
(*a*) Revenue from shared and private forests.												
V. Miscellaneous—												
(*a*) Fines and forfeitures ..	..	3,770	1,741	3,804	8,114	17,429	283	1,921	3 126	4,079	9,400	26,829
(*b*) Other sources	3,194	3,159	618	5,083	2,898	14,952	94	1,195	388	2,732	4,410	19,362
Total ..	3,267	94,070	34,373	86,970	93,160	3,11,840	8,307	90,803	1,36,418	34,267	2,69,795	5,81,635
Deduct 'Refunds'—Voted ..	..	144	111	2,980	3,424	6,659	205	72	6	..	28	6,942
Net Total, Receipts ..	3,267	93,926	34,262	83,990	89,736	3,05,181	8,102	90,731	1,36,412	34,267	2,69,512	5,74,693

Budget heads.	Fourth Circle.									Direction.
	Direction.	Forest Engineer	South Vellore.	West Vellore.	East Salem.	North Salem.	Central Salem.	South Salem.	Total.	
Receipts.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
I. Timber and other produce removed from the forests by Government Agency—										
(*a*) Timber	..	..	316	69	..	442	..	191	1,018	(*a*) 1,986
(*b*) Firewood and charcoal ..	..	..	358	6	11	81	..	198	654	..
(*c*) Bamboos	..	..	..	..	..	51	..	..	51	..
(*d*) Sandalwood	760	..	65,416	61,085	17,852	1,51,857	2,166	21,430	3,20,878	(*c*)1,55,288
(*e*) Grass and other minor produce.	..	..	2,879	..	46	42	38	..	3,005	..
II. Timber and other produce removed from the forests by consumers or purchasers—										
(*a*) Timber	..	..	10,313	1,868	20,380	3,151	9,812	27,125	72,649	..
(*b*) Firewood and charcoal ..	..	..	14,077	4,104	19,711	1,820	10,356	32,055	82,123	..
(*c*) Bamboos	..	..	55,011	12,982	83,772	1,204	10,895	10,596	1,24,460	..
(*d*) Grazing and fodder grass ..	..	..	34,280	32,835	49,672	24,715	34,788	27,747	2,04,017	..
(*e*) Other produce	..	..	22,360	14,279	31,212	10,038	11,768	63,726	1,53,373	..
(*f*) Rents for trees tapped ..	..	..	3,929	817	1,163	1,291	641	71	7,912	..
(*g*) Other items	..	..	..	..	11	774	.	..	785	..
(*h*) Commutation	..	..	..	..	..	4	1,354	..	1,358	..
III. Confiscated drift and waif-wood ..	..	..	178	694	284	146	306	463	2,071	..
IV. Revenue from forest not managed by Government—										
(*a*) Revenue from shared and private forests.	..	..	..	..	..	..	..	..	..	..
V. Miscellaneous—										
(*a*) Fines and forfeitures ..	..	..	22,512	8,055	28,716	3,357	7,804	24,349	94,793	..
(*b*) Other sources	..	— 23	1,452	1,608	2,124	1,339	7,103	3,074	16,677	344
Total .	760	— 23	2,33,061	1,38,402	2,04,954	2,00,312	97,020	2,11,025	10,85,511	1,57,618
Deduct 'Refunds'—Voted ..	..	..	8,889	10,333	2,425	5	3,329	798	25,779	..
Total, Receipts ..	760	— 23	2,24,172	1,28,009	2,02,529	2,00,307	93,691	2,10,927	10,59,732	1,57,618

Note for I Circle—

The revenue under Direction is distributed as follows :—

V-B. Direction, Rs. 217.

Ganjam, Rs. 2,977.

Note for the IV Circle—

Note.—(1) Of the Revenue under I (*d*), Rs. 760 relates to other circles (Rs. 720 to Tinnevelly, Fifth Circle, Rs. 37 to Chittoor and Rs. 3 to North Vellore, Third Circle).

(2) The amount of Rs. 3,20,878 under I (*d*) includes Rs. 312-8-11 which has not been brought to form 50 by the Accountant-General.

FORM No. 80.

Madras Presidency.

districts for the year 1922–23.

Second Circle.								Third Circle.								
Direction.	Bellary.	Anantapur.	Guntur.	Kurnool East.	Kurnool, South.	Kurnool, West.	Total.	Direction.	Cuddapah, North.	Cuddapah, South.	Cuddapah, West.	Nellore	Chingleput.	Chittoor.	Vellore North.	Total.
RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.		RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
..	..	..	6	11,261	11,776	18,894	41,937	..	7	5,987	102	..	1	174	16	6,267
..	84	..	..	417	202	8,406	9,109	..	65	41	23	293	77	1,171	222	1,892
..	..	..	..	3,569	5	11,277	14,851	..	..	..	..	..	..	..	33	33
..	..	..	..	..	..	..	..	..	..	..	1	..	..	40	..	41
..	..	..	..	2,945	..	2,735	5,680	..	..	..	..	17,413	3	..	419	17,835
..	6,335	17,830	7,374	2,364	7,499	5,447	46,849	..	2,376	5,101	11,070	6,803	5,941	13,990	16,713	61,994
..	8,720	3,944	20,363	389	8,341	2,741	44,498	..	6,971	6,347	6,306	37,538	10,974	11,130	19,055	88,321
..	56	235	..	320	28,155	..	28,766	..	4,555	3,990	2,238	110	65	5,917	14,141	31,016
..	30,307	49,492	1,00,743	39,706	13,661	33,635	2,67,544	..	20,101	10,277	29,633	78,832	24,187	44,086	30,093	2,37,209
..	28,008	81,654	11,684	5,162	10,978	30,607	1,68,093	..	6,413	9,654	16,255	10,629	7,872	53,120	21,853	1,25,796
..	24,962	15,739	5,098	1,385	2,638	7,130	56,952	..	900	1,564	2,506	9,870	3,013	4,608	5,208	27,669
..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	4
..	..	..	..	..	..	..	..	..	607	806	945	716	209	135	240	3,658
..	167	259	169	470	3,060	450	4,575	..	..	..	..	..	..	..	..	..
..	7,820	12,707	16,288	5,462	9,108	4,467	55,852	..	4,316	5,072	8,376	17,357	4,842	14,125	19,712	73,800
20	2,260	810	1,429	1,584	4,455	2,775	13,313	..	773	817	764	1,088	943	1,345	844	6,574
20	1,08,719	1,82,670	1,63,154	75,034	99,858	1,28,564	7,58,019	..	47,084	49,640	78,219	1,80,649	58,127	149,841	1,28,549	6,92,109
..	470	5	4,887	93	69	185	5,709	..	144	148	711	1,037	90	551	433	3,114
20	1,08,249	1,82,665	1,58,267	74,941	99,789	1,28,379	7,52,310	..	46,940	49,492	77,508	1,79,612	58,037	4,19,290	1,28,116	6,88,995

Fifth Circle.								Sixth Circle.								
Kollegal.	North Coimbatore.	South Coimbatore.	Madura.	Tinnevelly.	Forest Engineer	Total.	Directions.	North Mangalore.	South Mangalore.	Wynaad.	Nilambur.	The Nilgiris.	Palghat and Forest Exploitation Division.	Forest Research Division.	Total.
RS.	RS.	RS.	RS	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
		(*b*)													
230	599	2,52,236	6,332	11	..	2,61,394	..	16,212	59,905	83,327	1,93,873	20,217	89,259	..	4,62,793
..	..	..	140	57	..	197	..	220	9,700	..	440	31,810	288	..	42,458
..	..	..	..	..	..	..	..	12	2	..	12,478	..	268	..	12,760
..	1,09,129	..	..	(*d*) ..	..	2,64,417	..	13,865	2,666	..	..	3,804	..	..	20,335
270	35	(*e*) 1,490	..	..	..	1,796	..	7	129	87	51	487	..	..	761
5,008	10,128	11,051	8,696	1,805	..	36,688	..	27,751	10,757	6,686	1,620	4,177	17,554	..	68,545
1,870	34,817	14,237	66,265	1,65,536	..	2,82,725	..	33,930	3,469	681	..	11,667	46,320	..	96,007
7,151	24,582	5,451	3,469	1,119	..	41,772	..	2,356	2,133	1,007	1	1,140	100	..	6,737
42,000	16,196	6,333	22,957	14,121	..	1,31,607	..	5,395	10,200	4,497	..	8,481	6,830	..	35,403
5,530	11,507	8,591	35,671	37,735	..	99,094	..	3,183	6,610	3,023	4,760	1,463	9,694	..	28,733
45	39	..	..	..	..	84	..	570	335	..	..	..	— 1	..	904
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
193	251	127	947	416	..	1,934	..	1,499	131	66	..	27	214	..	1,937
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5,928	11,152	3,751	14,342	10,505	..	45,678	..	5,503	7,572	615	80	1,839	6,819	..	22,433
1,578	2,933	(*f*) 46,621	8,991	2,963	130	63,560	43 (*b*) 13300	1,745	3,333	34,226	4,297	77,924	9,754	245	1,31,567 (*b*) 13,300
69,863	2,51,369	3,49,888	1,67,810	2,34,268	130	12,30,946	13,343	1,12,253	1,16,882	1,34,215	2,17,600	1,63,036	1,87,099	245	9,44,673
2,028	161	154	856	226	..	3,425	13	465	2,024	..	1,277	297	59	..	4,135
67,835	2,51,208	3,49,734	1,66,954	2,34,042	130	12,27,521	13,330	1,11,788	1,14,858	1,34,215	2,16,323	1,62,739	1,87,040	245	9,40,538

Note for V Circle—

(*a*) Relates to South Coimbatore.

(*b*) Includes Rs. 83 pertaining to Palghat division in the VI Circle.

(*c*) Rs. 1,09,188 relates to North Coimbatore and the balance to Kollegal.

(*d*) Excludes Rs. 172 credited in the South Vellore accounts.

(*e*) Includes Rs. 1,103 pertaining to VI Circle.

(*f*) Excludes Rs. 13,300 credited in the Direction accounts, VI Circle.

The revenue for V Circle including the amounts credited in the VI Circle and South Vellore district and excluding the amounts pertaining to VI Circle comes to Rs. 12,40,307.

Note for VI Circle—

(*a*) Excludes Rs. 1,103 Wynaad 758 and the Nilgiris 345) credited in the V Circle.

(*b*) Sale amount of elephants of V Circle credited in the VI Circle.

	RS.	A.	P.
Total ..	9,40,538	0	0
Deduct revenue relating to V Circle ..	— 13,300	0	0
	9,27,238	0	0
Add revenue relating to VI Circle credited in the V Circle.	1,103	0	0
Note, VI Circle.	9,28,341	0	0

Summary of expenditure of the different districts for the year 1922-23.

Budget heads.	First Circle.											
	Direction.	Ganjam.	Vizagapatam	Godavari, Lower.	Kistna.	Total.	Vizagapatam Agency.	Godavari, Upper Agency.	Godavari, Lower Agency.	Parlakimedi Mahals.	Total.	Grand total.
B. Conservancy and Works.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs
I. Timber and other produce removed from the forests by Government Agency—												
(a) Timber	..	29,782	138	..	98	30,018	..	8,025	..	423	8,448	38,466
(b) Firewood and charcoal ..	..	..	..	105	..	105	..	210	..	400	610	715
(c) Bamboos	..	..	67	..	..	67	..	..	..	..	..	67
(d) Sandalwood	..	..	..	..	..	..	..	..	..	..	..	..
(e) Grass and other minor produce.	..	..	12	..	..	12	..	..	..	116	116	128
II. Timber and other produce removed from the forests by consumers or purchasers.	..	4,504	3,122	7,192	331	15,149	675	3,838	6 356	3,108	13,977	29,126
III. Confiscated drift and waifwood ..	..	6	..	666	4	676	..	118	5	..	118	794
IV. Forests not managed by Government—												
(a) Shared and private forests.	..	..	..	..	..	..	..	..	..	..	..	..
V. Rent of leased forests and payments to shareholders in forests managed by Government.	..	..	478	..	..	478	..	..	..	..	..	478
VI. Live-stock, stores, tools and plant—												
(a) Purchase of cattle	..	..	..	..	..	..	..	..	..	..	..	..
(b) Feed and keep of cattle ..	..	..	..	..	..	..	..	2,094	..	1,098	3,192	3,192
(c) Stores, tools and plant ..	505	31,401	120	6,411	1,095	39,532	..	1,364	26	35	1,435	40,967
VII. Communications and buildings—												
(a) Roads and bridges	..	1,642	614	712	515	3,483	..	834	2,139	..	2,973	6,456
(b) Buildings	..	10,372	1,081	1,210	1,085	13,748	664	5,482	1,771	240	8,157	21,905
(c) Other works	..	83	..	136	40	259	331	260	..	..	591	850
VIII. Demarcation, improvement and extension of forests—												
(a) Demarcation	..	58	..	..	240	298	..	1,334	111	73	1,518	1,816
(b) Cost of forest settlement, compensation for land and rights.	..	1,040	42	..	..	1,082	..	..	..	..	..	1,082
(c) Surveys—												
(1) Local	..	5	719	569	553	1,846	..	614	8	..	622	2,468
(2) India	..	..	..	..	..	..	..	..	..	..	..	..
(d) Working-plans ..	..	..	..	..	..	..	..	..	..	..	..	..
(e) Sowing and planting ..	231	714	51	16	233	1,244	31	146	75	265	517	1,761
(f) Protection from fire ..	..	5,407	243	488	716	6,879	1,331	10,854	4,036	658	16,879	23,758
(g) Other works	..	2,102	10	..	4,030	6,142	..	564	..	..	564	6,706
IX. Miscellaneous—												
Non-voted—												
(a) Rates and taxes	..	..	1	43	39	83	..	..	..	..	..	83
Voted—												
(b) Law charges	..	..	12	4	..	16	..	..	..	..	..	16
(c) Other charges	..	12	3	..	45	60	..	..	..	..	..	60
Investment on Government undertakings.	..	40,000	..	..	..	40,000	..	..	..	..	..	40,000
Total, B. Conservancy and Works ..	736	1,27,128	6,713	17,546	9,054	1,61,177	3,032	35,732	14,537	6,416	59,717	2,20,894
C. Establishments.												
I. Salaries—												
Non-voted—												
(a) Conservators	20,667	156	..	..	..	20,823	..	..	..	..	..	20,823
(b) Superior officers appointed by the Secretary of State.	1,675	18,920	8,677	4,722	..	33,994	..	3,213	..	6,689	9,902	43,896
(c) Deputation and other allowances.	425	..	..	..	..	425	..	..	..	..	..	425
Voted—												
(d) Superior officers appointed in India.	..	4,303	2,051	5,955	5,193	17,502	..	4,425	..	..	4,425	21,927
(e) Subordinate forest and depot establishments.	..	48,487	12,956	18,180	17,799	97,422	4,621	30,974	15,200	14,954	65,749	1,63,171
(f) Office establishments	8,486	12,876	5,043	9,532	6,269	42,206	694	8,967	1,612	3,659	14 932	57,138
(g) Deputation and other allowances.	..	3,128	..	65	8	3,201	..	7,551	2,592	3,131	13,074	16,275
II. Travelling allowances—												
(a) Conservators	2,971	235	..	203	..	3,409	..	156	..	10	256	3,665
(b) Superior officers	77	5,484	2 238	3,238	2,062	13,099	..	818	50	1.701	2,569	15,668
(c) Subordinate forest and depot establishments.	..	12,471	2,852	4,939	3,958	24,220	1,119	7,699	3,394	3,271	15,483	39,703
(d) Office establishments	1,366	2,370	744	1,851	731	7,062	135	2,516	584	781	4,016	11,078
III. Contingencies—												
Non-voted—												
Rates and taxes	347	273	249	126	72	1,067	23	..	..	140	163	1,230
Voted—												
(a) Contract items—												
(1) Service postage and telegrams charges.	300	1,198	1,130	869	805	4,302	10	1,071	218	1,150	2,449	6,751
(2) Other contract contingencies.	1,092	1,762	742	1,355	1,035	5,986	21	1,227	931	..	2,179	8,165
(b) Non-contract items—												
(1) Rents	..	16	..	108	499	623	..	115	..	..	115	738
(2) Sundries	354	1,259	93	521	138	2,365	..	..	..	..	..	2,365
Total, C. Establishments ..	37,760	1,12,938	36,775	51,664	38,569	2,77,706	6,623	68,552	24,581	35,576	1,35,312	4,13,018
Grand Total of Expenditure ..	38,496	2,40,056	43,488	69,210	47,623	4,38,883	9,655	1,04,264	39,118	41,992	1,95,029	6 33,912

Summary of expenditure of the different districts for the year 1922-23—*cont.*

Second Circle.								Third Circle.								
Direction.	Bellary.	Anantapur.	Guntur.	Kurnool, East.	Kurnool, South.	Kurnool, West.	Total.	Direction.	Cuddapah, North.	Cuddapah, South.	Cuddapah, West.	Nellore.	Chingleput.	Chittoor.	Vellore, North.	Total.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
..	..	..	..	2,540	1,328	3,558	7,426	..	..	2,974	..	..	..	405	7	3,386
..	..	..	..	240	..	3,560	3,800	..	..	6	..	27	..	284	..	317
..	..	..	..	2,446	..	5,342	7,788	..	..	..	..	..	..	..	43	43
..	..	..	..	..	..	..	..	..	..	..	..	..	..	102	..	102
..	..	..	18	2,848	..	2,609	5,475	..	11	..	..	6,229	..	..	391	6,631
..	3,031	2,397	3,992	3,480	3,245	8,625	24,770	..	3,145	2,632	4,368	1,956	1,252	6,932	2,477	22,762
..	..	8	..	19	67	7	101	..	68	23	3	5	..	4	3	106
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	2	..	..	2,244	2,246	..	..	..	..	..	30	..	..	30
1	682	51	1,411	167	1,620	1,130	5,062	116	802	349	1,680	4,783	198	346	332	8,606
..	..	153	396	5,126	3,896	10,186	19,757	..	554	6,592	1,606	..	1,325	2,472	1,544	14,093
..	2,002	2,323	6,086	3,474	6,155	1,850	21,890	..	3,808	8,544	2,028	6,399	1,985	6,949	1,762	31,475
..	..	21	300	706	106	173	1,306	..	41	470	48	77	136	1,516	15	2,303
..	62	511	23	214	15	37	862	..	..	41	164	960	1,437	1,964	15	4,581
..	..	..	..	..	..	..	..	..	4	5	2,230	— 736	..	23	47	1,573
..	29	..	..	936	..	201	1,166	451	..	..	..	75	..	..	572	1,096
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	17	..	..	..	..	17	..	..	..	..	..	..	..	..	..	..
..	30	149	..	773	94	12,844	13,890	..	42	153	54	46	15	1,005	944	2,259
..	140	371	..	1,528	2,691	1,493	6,023	..	2,551	4,168	2,598	1,695	1,348	4,972	310	17,642
..	40	3,643	6,806	2,011	24	16	12,540	..	..	2,643	3,140	2,035	1,351	9,471	7,894	26,534
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	5
..	..	..	..	..	9	5	14	..	21	..	..	..	..	69	..	90
..	..	10	258	265	6	697	1,236	3	241	25	68	..	..	285	..	622
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1	6,033	9,637	19,292	26,573	19,256	54,577	1,35,369	570	11,288	28,625	17,987	23,549	9,077	36,799	16,361	1,44,256
24,129	..	..	..	..	..	..	24,129	23,126	..	..	..	..	..	..	..	23,126
6,525	5,178	..	22,302	..	..	2,927	36,932	4,620	..	9,769	..	..	..	4,600	..	18,989
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	7,802	10,986	3,206	8,487	5,728	12,189	48,398	..	4,883	2,001	7,002	9,522	5,773	13,000	5,503	47,684
..	38,397	40,738	36,485	29,681	41,871	47,123	2,34,295	..	34,324	38,213	35,444	53,520	29,781	56,750	25,053	2,73,085
9,621	8,426	8,988	9,631	9,229	8,950	13,282	68,127	10,662	8,054	8,860	9,995	9,709	6,200	9,745	6,310	69,535
..	..	..	..	1,316	3,112	4,243	8,671	..	11	..	..	..	..	..	34	45
2,267	..	..	..	..	209	..	2,476	1,942	150	..	441	..	29	1,613	300	4,475
621	2,558	1,340	5,936	1,668	1,879	3,487	17,489	592	1,429	2,320	1,636	2,681	1,971	3,682	1,364	15,625
..	6,180	7,242	6,617	7,155	8,535	11,483	47,212	..	9,157	7,958	9,493	10,136	4,769	9,460	4,353	55,326
1,012	919	1,077	1,581	1,400	1,470	2,715	10,174	1,412	816	1,036	1,362	1,388	1,257	1,762	545	9,576
..	417	95	20	28	60	103	723	..	73	41	33	30	25	206	130	538
289	531	723	746	759	812	1,280	5,140	260	609	684	641	981	411	938	505	5,029
1,905	1,516	1,320	1,453	1,744	1,622	1,838	11,398	8,381	1,459	1,030	1,291	1,413	789	1,609	688	16,660
601	..	..	69	402	..	72	1,144	..	..	10	152	..	574	24	..	760
41	..	160	108	305	410	670	1,694	12	170	458	564	67	..	178	68	1,517
47,011	71,924	72,669	88,154	62,174	74,658	1,11,412	5,18,002	51,007	61,135	72,380	68,054	89,397	51,579	1,03,567	44,853	5,41,972
47,012	77,957	82,306	1,07,446	88,747	93,914	1,55,989	6,53,371	51,577	72,423	101,005	86,041	1,12,946	60,656	1,40,366	61,214	6,86,228

Summary of expenditure of the different districts for the year 1922-23—*cont.*

Budget heads.	Fourth Circle.									Fifth	
	Direction.	Forest Engineer.	Vellore, South.	Vellore West.	Salem, East.	Salem, North.	Salem, Central.	Salem, South.	Total.	Direction.	Kollegal.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs	Rs.	Rs.	Rs.	Rs.	Rs.
I. Refunds and Drawbacks ..	..	..	..	..	..	..	..	..	..	..	..
B. Conservancy and Works.											
I. Timber and other produce removed from the forests by Government Agency—											
(*a*) Timber	..	..	..	256	..	50	..	..	306	..	..
(*b*) Firewood and charcoal.	..	..	..	..	..	34	..	..	34	..	..
(*c*) Bamboos	..	..	..	..	..	24	..	..	24	..	..
(*d*) Sandalwood	..	..	4,685	5,267	1,449	11,795	921	2,353	26,470	..	3,505
(*e*) Grass and other minor produce.	..	..	206	6	..	11	— 1	..	222	..	146
II. Timber and other produce removed from the forests by consumers or purchasers.	..	..	894	1,444	2,314	275	2,906	5,928	13,761	..	3,268
III. Confiscated, drift and waif-wood.	..	..	4	23	14	41	4	1	87	..	..
IV. Forests not managed by Government—										..	..
(*a*) Shared and private forests.	..	..	..	..	..	..	..	..	..	..	..
V. Rent of leased forests and payments to shareholders in forests managed by Government.	..	..	..	..	..	9	..	..	9	..	..
VI. Live-stock, stores, tools and plant—											
(*a*) Purchase of cattle ..	..	..	..	..	..	..	..	..	..	300	..
(*b*) Feed and keep of cattle.	..	..	..	..	..	..	..	..	..	..	..
(*c*) Stores, tools and plant.	1,323	6	78	681	798	1,837	128	516	5,367	1,309	445
VII. Communications and buildings—											
(*a*) Roads and bridges ..	..	57,929	1,321	2,686	1,381	1,320	577	2,171	67,385	786	764
(*b*) Buildings	..	..	3,562	2,038	2,585	1,037	1,499	2,997	13,718	6,133	2,689
(*c*) Other works	..	..	455	314	..	131	61	25	986	52	1,554
VIII. Demarcation, improvement and extension of forests—											
(*a*) Demarcation	..	..	32	241	880	19	578	404	2,104	..	403
(*b*) Cost of Forest Settlement; compensation for land and rights.	..	..	..	..	..	..	..	..	..	..	..
(*c*) Surveys .. { Local ..	..	..	..	575	521	..	..	702	1,798	..	..
(*c*) Surveys .. { India ..	..	..	..	..	..	..	..	..	..	..	..
(*d*) Working-plans ..	..	..	..	..	..	..	7	..	7	111	..
(*e*) Sowing and planting..	..	..	781	181	6	369	346	196	1,885	..	..
(*f*) Protection from fire ..	..	..	961	283	563	879	899	770	4,361	..	563
(*g*) Other works	..	..	3,546	2,995	5,248	3,683	4,280	993	20,755	..	1,202
IX. Miscellaneous—											
Non-voted—											
(*a*) Rates and taxes ..	..	..	..	113	..	..	12	..	125	..	13
Voted—											
(*b*) Law charges	..	..	..	6	5	16	..	..	27	..	20
(*c*) Other charges ..	6	..	70	..	156	103	10	163	508	100	3
Total, B. Conservancy and Works..	1,329	57,935	16,608	17,112	15,876	21,633	12,227	17,219	1,59,939	8,791	14,615
C. Establishments.											
I. Salaries—											
Non-voted—											
(*a*) Conservators	25,352	..	..	..	..	..	..	.	25,352	25,316	..
(*b*) Superior officers appointed by the Secretary of State.	6,514	4,779	2,475	10,769	..	3,757	..	2,821	31,115	4,084	..
(*c*) Deputation and other allowances.	..	..	..	..	..	..	..	..	..	..	..
Voted—											
(*d*) Superior officers appointed in India.	..	2,300	6,078	..	6,683	6,063	6,850	4,882	32,856	3,864	6,393
(*e*) Subordinate Forest and depot establishments.	150	4,999	30,160	26,601	37,670	27,969	27,219	34,034	1,88,802	5,130	29,883
(*f*) Office establishment ..	10,084	2,285	8,343	8,634	7,635	9,096	9,793	8,864	64,684	10,884	5,559
(*g*) Deputation and other allowances.	..	..	..	..	..	..	..	..	..	..	1,363
II. Travelling allowances—											
(*a*) Conservators	2,090	..	..	..	..	..	..	..	2,090	3,698	..
(*b*) Superior officers	2,332	1,445	1,965	1,511	1,405	2,184	1,119	1,705	13,666	2,274	1,220
(*c*) Subordinate Forest and depot establishments.	..	1,405	5,248	4,992	6,560	8,619	4,252	5,841	36,917	1,416	3,259
(*d*) Office establishments ..	659	444	864	925	1,123	794	444	1,188	6,441	1,247	340
III. Contingencies—											
Non-voted—											
(*a*) Rates and taxes	..	..	214	134	53	25	..	31	457	195	53
Voted —											
(*a*) Contract items—											
(1) Service postage and telegrams.	248	..	704	446	799	1,014	796	954	4,961	707	367
(2) Other contract contingencies.	1,240	..	1,106	1,108	1,273	1,230	1,273	1,309	8,539	1,757	1,488
(*b*) Non-contract items—											
(1) Rents	..	600	..	..	..	..	..	..	600	..	.
(2) Sundries	9	572	193	..	172	246	37	487	1,716	70	..
Total, C. Establishments ..	48,678	18,779	57,350	55,120	63,373	60,997	51,783	62,116	4,18,196	60,671	50,927
Grand Total of Expenditure ..	50,007	76,714	73,958	72,232	79,249	82,630	64,010	79,335	5,78,137	69,462	65,540

Summary of expenditure of the different districts for the year 1922–23—*cont.*

Circle.						Sixth Circle.								
North Coimbatore.	South Coimbatore.	Madura.	Tinnevelly.	Forest Engineer.	Total.	Direction.	North Mangalore.	South Mangalore.	Wynaad.	Nilambur.	The Nilgiris.	Palghat & forest Exploitation Divn.	Forest Research Divn.	Total.
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
161	80,819	2,278	33	..	83,291	..	4,352	24,252	36,839	41,179	11,024	65,586	..	1,83,232
..	..	..	4	..	4	..	1,754	4,956	..	..	13,969	22	..	20,701
..	..	..	..	..	..	..	..	..	..	17,865	..	35	..	17,900
14,335	..	..	92	..	17,932	..	1,212	390	..	..	1,636	..	..	3,238
116	..	..	..	..	262	..	1	645	60	12	517	..	..	1,235
6,623	1,165	2,806	5,501	..	19,363	..	1,167	780	1,819	1,772	69	2,209	..	7,816
17	20	..	..	..	37	..	73	..	..	..	1	45	..	119
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	2,500	..	..	..	2,500	..	..	..	..	1,500	..	..	..	1,500
..	7,843	..	..	..	8,143	..	..	..	4,102	1,191	2,796	..	..	8,089
..	46,942	..	..	..	46,942	..	..	5,905	19,676	36,153	45,913	15,255	..	1 22,902
299	4,613	435	1,015	6	8,122	184	507	1,561	927	4,502	2,273	13,637	..	23,591
2,344	14,193	13,094	2,775	44,880	78,776	..	1,782	1,053	14,052	3,227	11,056	15,900	..	47,070
1,747	7,401	2,590	943	..	21,503	..	2,087	1,460	2,044	19,851	*10,982	15,982	23	52,429
151	99	289	2	..	2,147	..	2,565	408	10	510	827	808	..	5,128
116	94	508	..	..	1,121	..	..	17	346	..	220	..	..	583
..	..	..	418	..	418	..	..	30	..	..	1,005	..	..	1,035
800	..	..	..	..	800	..	..	12	6	..	..	1,165	..	1,183
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	..	..	..	..	111	..	63	..	..	84	..	— 6	..	141
328	7,295	1,406	5,081	..	14,110	..	5,211	6,822	4,053	15,873	7,088	1,424	..	40,471
1,453	564	3,727	1,729	..	8,036	..	2,686	3,221	2,607	3,552	1,905	5,104	..	18,958
4,508	3,578	8,602	342	..	18,332	..	..	2,539	857	802	1,597	3,825	..	9,530
18	24	..	..	..	55	..	..	..	..	..	290	37	..	377
..	..	..	10	..	30	..	..	25	7	..	..	— 9	..	23
45	1,927	1	83	..	2,159	13	55	149	55	753	6,280	1,074	1,396	9,775
33,061	179,077	35,736	18,028	44,886	3,34,194	197	23,495	54,225	87,360	1,48,826	1,19,361	1,42,143	1,419	5,77,026
..	..	..	..	..	25,316	22,056	..	..	..	..	..	..	..	22,056
21,282	10,642	..	..	4,779	40,787	4,399	..	21,553	875	..	13,477	14,995	8,574	63,873
..	..	..	..	..	..	1,335	..	..	36	..	..	..	..	1,371
..	2,680	7,013	7,707	2,300	29,957	8,240	9,864	375	6,038	16,869	3,625	9,710	7,186	61,907
36,167	30,381	42,885	41,975	4,998	1,91,419	2,194	30,112	22,141	19,036	18,469	33,488	30,886	2,189	1,58,515
8,987	10,452	9,214	9,989	2,235	58,320	8,837	8,241	6,949	7,333	9,163	9,804	10,549	1,841	62,717
287	6,999	656	..	..	9,205	1,873	..	..	11,387	46	12,441	53	..	25,800
..	..	..	..	..	3,698	4,839	..	..	..	..	..	..	..	4,839
1,659	3,547	2,495	1,955	1,445	14,595	3,235	2,468	3,108	1,861	3,568	1,673	2,747	2,618	21,278
7,017	5,997	7,943	8,049	1,405	35,115	230	4,618	4,075	3,868	4,750	6,927	7,613	959	33,040
1,059	1,491	1,759	1,002	444	7,342	961	833	751	626	1,974	1,645	1,451	364	8,605
104	236	467	95	..	1,150	84	..	45	..	..	419	25	104	677
936	840	952	865	..	4,667	776	827	784	718	549	952	808	75	5,489
1,650	1,448	1,542	1,011	..	8,896	1,270	1,102	905	1,020	2,283	1,517	1,892	212	10,201
13	337	7	225	600	1,182	..	..	..	..	170		2	..	172
156	1,740	100	24	572	2,662	73	258	172	184	1,170	1,208	62	437	3,554
79,317	76,790	75,033	72,897	18,778	4,34,411	60,402	58,323	60,858	52,982	59,011	† 87,176	80,793	24,559	† 4,84,104
1,12,378	2,55,867	1,10,769	90,925	63,664	7,68,605	60,599	81,818	1,15,083	1,40,342	2,07,837	2,06,537	2,22,936	25,978	10,61,130

* Includes Rs. 5,923 spent on Madras Forest College camp buildings—Net expenditure, Sixth Circle, Rs. 5,71,103.

† Includes Rs. 2,900 leave pay of Mr. H. W. A. Gaudoin, Deputy Conservator—Net expenditure, Sixth Circle, Rs. 4,81,204.

Summary of receipts and expenditure during 1922-23 for each circle and for the Presidency compiled in the Chief Conservator's office from Conservators' statements.

Budget heads.	First Circle, including Agency divisions and Parlakimedi mahals.	Second Circle.	Third Circle.	Fourth Circle.	Fifth Circle.	Sixth Circle.	Forest College, Coimbatore.	Grand total, Presidency.	
								1922-23.	1921-22.
RECEIPTS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
I. Timber and other produce removed from the forests by Government Agency—									
(a) Timber	67,270	41,937	6,267	1,018	2,61,394	4,62,793	..	8,40,679	7,75,063
(b) Firewood and cha coal ..	3,159	9,109	1,892	654	197	42,458	188	57,657	57,399
(c) Bamboos	..	14,851	33	51	..	12,760	..	27,695	18,194
(d) Sandalwood	..	..	41	3,20,565	2,64,417	20,335	..	6,05,358	6,34,581
(e) Grass and other minor produce.	156	5,680	17,835	3,005	1,796	761	..	29,233	80,629
Total, I ..	70,585	71,577	26,068	3,25,293	5,27,804	5,39,107	188	15,60,622	15,65,816
II. Timber and other produce removed from the forests by consumers or purchasers—									
(a) Timber	56,822	46,849	61,994	72,649	36,688	68,545	..	3,43,047	3,21,993
(b) Firewood and charcoal ..	1,22,824	44,498	98,321	82,123	2,82,725	96,007	..	7,26,498	7,04,254
(c) Bamboos	1,43,168	28,766	31,016	1,24,460	41,772	6,737	..	3,75,919	3,00,026
(d) Grazing and fodder grass..	48,201	2,67,544	2,37,209	2,04,017	1,31,607	35,403	111	9,24,092	7,89,721
(e) Other minor produce ..	58,984	1,68,093	1,25,796	1,53,373	99,094	28,733	2	6,34,075	5,90,776
(f) Tree-owners' fees or trees tapped.	28,176	56 952	27,669	7,912	84	904	..	1,21,697	98,426
(g) Other items	..	..	4	785	..	..	..	789	492
(h) Commutation fees	321	..	..	1,358	..	..	..	1,679	1,148
Total, II ..	4,57,996	6,12,702	5,82,009	6,46,677	5,91,970	2,86,329	113	31,27,796	28,06,846
III. Confiscated forest produce drift and waif wood.	6,863	4,575	3,658	2,071	1,934	1,937	..	21,038	18,030
IV. Forest not managed by Government—									
(a) Shared and private forests.	..	..	..	..	..		..	..	..
V. Miscellaneous—									
(a) Fines and forfeitures ..	28,829	55,852	73,800	94,793	45,678	22,433	2	3,19,387	2,77,905
(b) Other sources	19,362	13,313	6,574	16,677	63,560	1,44,867	36,185	(a) 3,00,737	1,66,991
Total, V ..	46,191	69,165	80,374	1,11,470	1,09,238	1,67,300	36,187	6,20,122	4,43,896
Total ..	5,81 635	7,58,019	6,92,109	10,85,511	12,30,946	9,44,673	36,488	53,29,578	48,34,588
Deduct refunds—Reserved—Voted ..	6,942	5,709	3,114	25,779	3,425	4,135	..	49,104	37,688
Grand Total, Receipts ..	5,74,693	7,52,310	6,88,995	10,59,732	12,27,521	9,40,538	36,488	(a)52,80,474	47,96,900
	*+2,025	*—2,774	*+860	*—4,814	*—1,194	*—1,604	*—16	*—7,517	*+ 60,060
	5,76,718	7,49,536	6,89,855	10,54,918	12,26,327	9,38,934	36,472	52,72,957	48,56,960
EXPENDITURE.									
B. Conservancy and Works.									
I. Timber and other produce removed from the forests by Government Agency—									
(a) Timber	38,466	7,426	3,386	306	83,291	1,83,232	..	3,16,107	2,89,844
(b) Firewood and charcoal ..	715	3,800	317	34	4	20,701	..	25,571	41,284
(c) Bamboos	67	7,788	43	24	..	17,900	..	25,822	26,851
(d) Sandalwood	..	..	102	26,470	17,932	3,238	..	47,742	45,293
(e) Grass and other minor produce.	128	5,475	6,631	222	262	1,235	..	13,953	13,552
Total, *A*-I ..	39,376	24,489	10,479	27,056	1,01,489	2,26,306	..	4,29,195	4,16,824
II. Timber and other produce removed from the forests by consumers or purchasers.	29,126	24,770	22,762	13,761	19,363	7,816	..	1,17,598	1,15,506
III. Confiscated forest produce drift and waifwood.	794	101	105	87	37	119	..	1,244	2,098
IV. Forests not managed by Government—									
(a) Shared and private forests.	..	..	..	..	..	..	..	..	..
V. Rent of leased forests and payments to shareholders in forests not managed by Government.	478	..	..	9	2,500	1,500	..	4,487	4,587
VI. Live-stock, stores, tools and plant—									
(a) Purchase of cattle ..	..	..	..	..	8,143	8,089	..	16,232	21,337
(b) Feed and keep of cattle ..	3,192	2,246	30	..	46,942	1,22 902	..	1,76,312	1,97,160
(c) Stores, tools and plant ..	40,967	5,062	8,606	5,367	8,122	23,591	5,507	97,222	3,57,644
Total, *A*-VI ..	44,159	7,308	8,636	5,267	63,207	1,54,582	5,507	2,88,766	5,76,141
VII. Communications and buildings—									
(a) Roads and bridges ..	6,456	19,757	14,093	67,385	78,776	47,070	3,960	2,37,497	2,02,118
(b) Buildings	21,905	21,890	31,475	13,718	21,503	52,429	14,162	1,77,082	2,52,187
(c) Other works	850	1,306	2,303	986	2,147	5,128	1,540	14,260	12,337
Total, *A*-VII ..	29,211	42,953	47,871	82,089	1,02,426	1,04,627	19,662	4,28,839	4,66,642

* Added or deducted as per Accountant-General's audited figures.
(a) Includes Rs. 197 under A. Direction V (*b*). Other sources.

Summary of receipts and expenditure during 1922–23 for each circle and for the Presidency compiled in the Chief Conservator's office from the Conservators' statements—*cont.*

Budget heads.	First Circle, including Agency divisions and Parlakimedi maliahs.	Second Circle.	Third Circle.	Fourth Circle.	Fifth Circle.	Sixth Circle.	Forest College, Coimbatore.	Grand total, Presidency. 1922-23.	Grand total, Presidency. 1921-22.
EXPENDITURE—*cont.*									
B. Conservancy and Works—cont.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
VIII. Demarcation, improvement and extension of forests—									
(*a*) Demarcation	1,816	862	4,581	2,104	1,121	583	..	11,067	18,758
(*b*) Cost of forest settlement compensation for land and rights.	1,082	..	1,573	..	418	1,035	..	4,108	10,228
(*c*) Surveys (1) Local ..	2,468	1,166	1,096	1,798	800	1,183	..	8,511	14,226
(2) India ..	..	..	..	..	..	..	..	..	..
(*d*) Working-plans	..	17	..	7	111	141	..	276	7,275
(*e*) Sowing and planting ..	1,761	13,890	2,259	1,885	14,110	40,471	4,080	78,456	58,224
(*f*) Protection from fire ..	23,758	6,023	17,642	4,361	8,036	18,958	..	78,778	1,11,850
(*g*) Other works	6,706	12,540	26,534	20,755	18,332	9,530	4	94,401	1,24,458
Total, *A*-VIII ..	37,591	34,498	53,685	30,910	42,928	71,901	4,084	2,75,597	3,45,019
IX. Miscellaneous—									
Non-voted—									
(*a*) Rates and taxes	83	.	5	125	55	377	..	645	625
Voted—									
(*b*) Law charges	16	14	90	27	30	23	..	200	1,570
(*c*) Other charges	60	1,236	622	508	2,159	9,775	1,978	16,338	18,923
Total, *A*-IX ..	159	1,250	717	660	2,244	10,175	1,978	17,183	21,118
Investment in Government undertaking.	40,000	..	..	..	..	..	..	40,000	..
Total, *A*. Conservancy and Works.	2,20,894	1,35,369	1,44,256	1,59,939	3,34,194	5,77,026	31,231	16,02,909	19,47,935
	(*a*)+2,451	..	(*a*) + 5	(*a*) —11	(*a*) — 3	(*a*) + 4	(*a*) —1	+ 2,445	..
	2,23,345	1,35,369	1,44,261	1,59,928	3,34,191	5,77,030	31,230	16,05,354	19,47,935
C. Establishment.									
I. Salaries—									
Non-voted—									
(*a*) Conservators	20,823	21,129	23,126	25,352	25,316	22,056	..	1,40,802	1,36,531
(*b*) Superior officers appointed by the Secretary of State.	43,896	36,932	18,989	31,115	40,787	63,873	33,581	2,69,173	1,61,057
(*c*) Deputation and other allowances.	425	..	..	..	..	1,371	..	1,796	236
Voted—									
(*d*) Superior Officers appointed in India.	21,927	48,398	47,684	32,856	29,957	61,907	19,269	2,61,998	2,20,497
(*e*) Subordinate Forest and Depot establishment.	1,63,171	2,34,295	2,73,085	1,88,802	1,91,419	1,58,515	16,935	12,26,222	11,58,604
(*f*) Office establishments ..	57,138	68,127	69,535	64,684	58,320	62,717	8,189	3,88,710	3,69,885
(*g*) Deputation and other allowances.	16,275	8,671	45	..	9,305	25,800	77	60,173	58,874
Total, I ..	3,23,655	4,20,552	4,32,464	3,42,809	3,55,104	3,96,239	78,051	23,48,874	21,05,684
II. Travelling allowance—									
(*a*) Conservators	3,665	2,476	4,475	2,090	3,698	4,839	..	21,243	25,215
(*b*) Superior officers	15,668	17,489	15,625	13,666	14,595	21,278	7,119	1,05,440	1,08,908
(*c*) Subordinate Forest and Depot establishments.	39,703	47,212	55,326	36,917	35,115	33,040	7,256	2,54,569	2,90,926
(*d*) Office establishments ..	11,078	10,174	9,578	6,441	7,342	8,605	1,809	55,027	81,194
Total, II ..	70,114	77,351	85,004	59,114	60,750	67,762	16,184	4,36,279	5,06,243
III. Contingencies—									
Non-voted—									
Rates and taxes	1,230	723	538	457	1,150	677	..	4,775	2,965
Voted—									
(*a*) Contract items—									
(1) Service postage and telegram charges.	6,751	5,140	5,029	4,961	4,667	5,489	..	32,037	35,650
(2) Other contract contingencies.	8,165	11,398	16,660	8,539	8,896	10,201	..	63,859	78,437
(*b*) Non-contract items—									
(1) Rents	738	1,144	760	600	1,182	172	..	4,596	4,701
(2) Sundries	2,365	1,694	1,517	1,716	2,662	3,564	15,470	28,988	7,310
Total, III Contingencies ..	19,249	20,099	24,504	16,273	18,557	20,103	15,470	1,34,255	1,29,063
	4,13,018	5,18,002	5,41,972	4,18,196	4,34,411	4,84,104	1,09,705	29,19,408	27,40,990
	(*a*)+22,672	..	(*a*) + 2	(*a*) — 2	(*a*) — 228	(*a*) + 4	(*a*)+580	(*a*)+ 23,028	..
Total of Establishment and Contingencies.	4,35,690	5,18,002	5,41,974	4,18,194	4,34,183	4,84,108	1,10,285	29,42,436	1,53,441
Grand Total Expenditure ..	6,59,035	6,53,371	6,86,235	5,78,122	7,68,374	10,61,138	1,41,515	45,47,790	48,42,366
								(*c*)+2,03,307	+(*b*)3,16,329
								(*d*)+ 20,473	
								(*c*)+17,893	51,58,695
								47,89,463	

(*c*) 8. Forests—A. General — Direction.

Non-Voted	Rs.
Chief Conservator ..	38,000
Rates and taxes ..	316
Voted—	
Gazetted officers .	21,892
Establishment ..	19,256
Travelling allowance ..	12,179

Contingencies—	Rs.
Contract items—	
Service postage and telegram charges ..	1,200
Other contract items ..	1,546
Non-contract items ..	1,08,908
Total ..	2,03,307

(*a*) Added or deducted as per Accountant-General's audited figures.

(*b*) Includes expenditure relating to the Forest College (Rs. 1,47,081), the Parlakimedi Maliahs and Golgonda Agency, (Rs. 69,537), Establishment charges debitable to Chief Conservator's office (Rs. 39,746) and Rs. 16,626 added as per Accountant-General's audited figures.

(*c*) Expenditure on the Special Forest Panchayat staff.

(*d*) Loss or gain by exchange transaction with England as reported by Accountant General.

ANNUAL FORM No. 81.

Forest Department, Madras Presidency.

Outstandings and liabilities on account of contractors and disbursers for the year 1922–23.

District.	Department debtor.			Department creditor.			Balance due.	
	At commencement of year.	Recoveries in cash and value of supplies and work done during the year.	At close of year.	At commencement of year.	Payments made during year.	At close of year.	To department (outstandings).	By department (liabilities).
First Circle.		RS. A. P.		RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
Chief Conservator's Office ..	..	..	..	..	..	..	..	..
Direction I	..	1,206 1 2	..	9 12 2	1,220 9 3	1,230 5 5	24 4 3	..
Ganjām	..	1,92,213 9 3	..	1,919 12 11	1,90,966 3 3	1,92,886 0 2	672 6 11	..
Vizagapatam	..	36,803 13 4	..	381 1 11	36,587 8 4	36,968 10 3	164 12 11	..
Gōdavari, Upper	..	88,284 7 4	..	3,388 2 4	85,602 3 11	88,990 6 3	705 14 11	..
Do. Lower	..	88,403 7 10	..	181 13 6	88,331 6 5	88,513 3 11	109 12 1	..
Kistna	..	34,064 3 6	..	648 0 7	33,671 11 0	34,319 11 7	255 8 1	..
Total ..	..	4,40,975 10 5	..	6,528 11 5	4,36,379 10 2	4,42,908 5 7	1,932 11 2	..
Second Circle.								
Direction	..	1,673 11 2	..	70 1 9	1,612 14 0	1,682 15 9	9 4 7	..
Guntur	..	76,244 12 8	..	514 1 3	76,703 9 10	77,217 11 1	972 14 5	..
Kurnool, East	..	78,824 11 7	..	779 13 2	79,609 5 10	80,389 3 0	1,564 7 5	..
Do. South	..	76,457 11 8	..	245 4 0	77,160 10 9	77,406 14 9	948 2 1	..
Do. West	..	1,31,708 4 10	..	633 11 1	1,31,943 15 11	1,32,577 11 0	869 6 2	..
Bellary	..	56,774 6 4	..	291 7 6	56,721 12 6	57,013 4 0	238 13 8	..
Anantapur	..	62,122 15 11	..	298 4 2	62,140 12 0	62,439 0 2	316 0 3	..
Total ..	..	4,83,806 10 2	..	2,832 10 11	4,85,893 0 10	4,88,725 11 9	4,919 1 7	..
Third Circle.								
Direction	..	3,102 6 0	..	13 4 2	3,110 0 4	3,123 4 6	20 14 6	..
Cuddapah, North	..	59,927 0 9	..	112 5 2	60,187 7 6	60,299 12 8	372 11 11	..
Do. South	..	85,167 13 1	..	720 9 8	85,170 4 10	85,890 14 6	723 1 5	..
Do. West	..	70,279 1 5	..	3,394 0 0	67,069 0 3	70,463 0 3	183 14 10	..
Nellore	..	90,816 6 8	..	292 4 7	90,657 1 3	90,949 5 10	132 15 2	..
Chittoor	..	1,28,525 12 5	..	395 8 5	1,28,513 0 9	1,28,908 9 2	382 12 9	..
North Vellore .. .	..	50,566 2 6	..	54 8 2	51,408 11 3	51,463 3 5	897 0 11	..
Chingleput	..	44,131 15 7	..	235 12 8	43,982 4 11	44,218 1 7	86 2 0	..
Total ..	..	5,32,516 10 5	..	5,218 4 10	5,30,097 15 1	5,35,316 3 11	2,799 9 6	..
Fourth Circle.								
Direction	..	1,281 8 1	..	33 3 7	1,291 13 6	1,325 1 1	43 9 0	..
Vellore, South	..	57,267 14 7	..	244 0 11	57,092 8 3	57,336 9 2	68 10 7	..
Do. West	..	56,305 14 0	..	149 10 11	56,482 4 10	56,631 15 9	326 1 9	..
Salem, East	..	64,854 13 3	..	668 11 9	64,611 8 1	65,280 3 10	425 6 7	..
Do. North	..	73,794 1 3	..	809 15 11	74,065 10 9	74,875 10 8	1,081 9 5	..
Do. Central	..	48,731 7 5	..	441 12 3	49,244 1 11	49,685 14 2	954 6 9	..
Do. South	..	69,364 13 2	..	759 14 10	69,780 11 6	70,540 10 4	1,175 13 2	..
Forest Engineer's Office ..	..	49,592 1 4	..	528 5 1	50,440 2 9	50,968 7 10	1,076 6 6	..
Total ..	..	4,21,492 9 1	..	3,635 11 3	4,23,008 13 7	4,26,644 8 10	5,151 15 9	..
Fifth Circle.								
Direction	..	21,079 13 5	..	1,607 3 0	20,000 0 3	21,607 3 3	527 5 10	..
Madura	..	1,11,787 4 0	..	1,878 12 3	1,11,126 2 0	1,13,004 14 3	1,217 10 3	..
Tinnevelly	..	79,885 9 10	..	1,169 1 3	79,202 11 6	80,371 12 9	486 2 11	..
Kollegal	..	58,053 13 6	..	24 5 2	58,710 3 8	58,734 8 10	680 11 4	..
Coimbatore, North	..	88,496 7 5	..	90 11 8	89,982 0 0	90,072 11 8	1,576 4 3	..
Do. South	..	2,44,065 8 7	..	2,134 6 1	2,46,977 11 8	2,49,112 1 9	5,046 9 2	..
Total ..	..	6,03,368 8 9	..	6,904 7 5	6,05,998 13 1	6,12,903 4 6	9,534 11 9	..
Sixth Circle.								
Direction	..	943 14 2	..	38 15 1	931 6 0	970 5 2	26 7 0	..
The Nilgiris	..	1,62,223 15 10	..	1,374 3 10	1,62,481 10 4	1,63,855 14 2	1,631 14 4	..
Wynad	..	89,803 3 7	..	421 4 0	89,934 13 8	90,356 1 8	552 14 1	..
Nilambur	..	1,40,712 1 6	..	9,447 13 6	1,35,995 6 4	1,45,443 3 10	4,731 2 4	..
Mangalore, North	..	68,806 1 4	..	18 11 0	69,317 12 6	69,336 7 6	530 6 2	..
Do. South	..	92,855 11 1	..	290 10 11	92,950 11 4	93,241 6 3	386 11 2	..
Forest Research Office ..	..	4,835 9 4	..	445 10 11	4,554 6 0	5,000 0 11	164 7 7	..
Palghat	..	1,16,582 12 10	..	1,520 7 3	1,16,146 0 8	1,17,666 7 6	1,083 0 8	..
Forest Exploitation Office ..	..	48,440 5 10	..	..	48,610 8 10	48,610 8 10	170 3 0	..
Total ..	..	7,25,203 11 6	..	13,557 12 7	7,20,922 11 8	7,34,480 7 10	9,276 12 4	..
Grand total, Presidency ..	..	32,07,363 12 4	..	38,677 10 5	32,02,301 0 0	32,40,978 10 5	33,614 14 1	..

ACCOUNTANT-GENERAL'S OFFICE,
MADRAS, *7th August* 1923.

C. SUBRAHMANYA AYYAR,
Deputy Accountant-General.

ANNUAL FORM No. 82.

Forest Department, Madras Presidency.

Revenue received and outstandings on account of revenue during 1922-23.

District.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realized during year.	Balance due to the department at end of year.
First Circle.		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A.
Direction	Timber and other forest produce.	..	3,267 0 0	3,267 0 0	3,267 0 0	..
Ganjam	Do.	3,696 8 3	95,017 10 0	98,714 2 3	93,926 0 0 (a) 2,000 0 0	2,788 2 3
Vizagapatam	Do.	2,376 0 6	44,693 14 6	47,069 15 0	42,364 0 0	4,705 15 0
Godavari, Upper	Do.	2,634 13 5	1,12,952 9 8	1,15,587 7 1	90,731 0 0 (a) 35 0 0 (b) 46 6 10	24,775 0 3
Do. Lower	Do.	804 2 10	2,21,076 1 2	2,21,880 4 0	2,20,402 0 0	1,478 4 0
Kistna	Do.	2,469 5 4	90,551 14 1	93,021 3 5	89,736 0 0	3,285 3 5
Second Circle.	Total ..	11,980 14 4	5,67,559 1 5	5,79,539 15 9	5,40,426 0 0 (a) 2,035 0 0 (b) 46 6 10	37,032 8 11
Bellary	Timber and other forest produce.	1,814 11 0	1,17,533 14 8	1,18,848 9 8	1,01,332 11 7	(a) 17,515 14 1
Anantapur	Do.	3,911 10 9	2,12,084 5 11	2,15,996 0 8	1,82,680 4 10	(b) 33,315 11 10
Guntur	Do.	1,157 8 0	1,64,529 11 11	1,65,687 3 11	1,58,267 12 11	(c) 7,419 7 0
Kurnool, East	Do.	4,230 4 0	76,737 6 9	80,967 10 9	74,940 10 9	(d) 6,027 0 0
Do. South	Do.	1,755 4 0	99,230 0 2	1,00,985 4 2	99,749 0 2	(e) 1,236 4 0
Do. West	Do.	95 0 0	1,31,585 10 4	1,31,680 10 4	1,28,249 10 4	(f) 3,431 0 0
Direction	Do.	..	20 0 0	20 0 0	20 0 0	..
	Total ..	12,464 5 9	8,01,721 1 9	8,14,185 7 6	7,45,240 2 7	68,945 4 11
Third Circle.						
Cuddapah, North	Timber and other forest produce.	6,186 14 6	45,882 1 5	52,068 15 11	47,083 14 7	4,985 1 4
Do. South	Do.	16,918 2 0 (b)—2,966 10 8	55,344 10 0	62,296 1 4	49,640 4 4	19,655 13 0
Do. West	Do.	8,874 7 9	81,356 3 1	90,230 10 10	78,218 10 10	12,012 0 0
Nellore	Do.	49,947 7 7 (a) — 142 10 8 (b)—4,500 0 0	2,33,912 9 11	2,79,217 6 10	1,80,649 0 3	98,568 6 7
Chingleput	Do.	4,759 10 0 (b) —733 5 4	59,334 1 11	63,360 6 7	58,126 10 11	5,233 11 8
Chittoor	Do.	9,907 15 11	1,41,183 4 1	1,51,091 4 0	1,49,841 4 0	1,250 0 0
Vellore, North	Do.	46,473 13 7 ()b—1,466 10 8	96,805 12 10	1,41,812 15 9	1,28,548 12 9	13,264 3 0
	Total ..	1,33,259 2 0	7,13,818 11 3	8,47,077 13 3	6,92,108 9 8	1,54,969 3 7
Fourth Circle.						
Direction	Timber and other forest produce.	..	(b 760 0 0	(b) 760 0 0	(b) 760 0 0	..
Vellore, South	Do.	21,437 9 1	2,22,806 13 6	2,44,244 6 7	2,33,061 0 0 (a) 25 0 0	11,158 6 7
Do. West	Do.	7,937 5 4	1,33,394 0 6	1,41,331 5 10	1,38,402 0 0	2,929 5 10
Salem, East	Do.	7,389 4 10	2,00,659 12 8	2,08,049 1 6	2,04,954 0 0 (a) 88 15 4	3,006 2 2
Do. North	Do.	13,211 9 1	1,94,315 14 1	2,07,527 7 2	2,00,312 0 0 (a) 706 11 2	6,508 12 0
Do. Central	Do.	7,186 7 10	1,03,051 11 1	1,10,238 2 11	97,020 0 0 (a) 686 0 0	12,532 2 11
Do. South	Do.	5,779 0 0	2,08,215 5 7	2,13,994 5 7	2,11,025 0 0 (a) 206 0 0	2,763 5 7
Forest Engineer	Do.	..	—23 0 0	—23 0 0	—23 0 0	..
	Total ..	62,941 4 2	10,63,180 9 5	11,26,121 13 7	10,85,511 0 0 (a) 1,712 10 6	38,898 3 1

(a) Erroneous demand.
(b) Cancellation of lease.

Note for First Circle.
Out of total outstandings of Rs. 37,032-8-11 the amount actually due on or before 31st March 1923 was Rs. 31,510-11-7.
(a) Eliminated on account of erroneous demand.
(b) Written off the accounts.

Note for Second Circle.
(a) Rs. 868-13-8 fell due within the year.
(b) Rs. 505-10-6 fell due within the year.
(c) Rs. 511-2-0 fell due within the year.
(d) Out of Rs. 3,282 relating to 1922-23, Rs. 3,075 relates to the irrecoverable arrears of Nux Vomica lease recommended to be written off the accounts.
(e) Rs. 791-4-0 fell due within the year.
(f) Rs. 1,237-10-8 fell due within the year.

Note for Third Circle.
(a) Elimination on account of erroneous demand.
(b) Written off as irrecoverable under G.O. Mis. No. 2044, Development, dated 1st November 1921.
(c) Do. under Chief Conservator's Proceedings No. 1053-Rout., dated 8th July 1921.

Note for Fourth Circle.
(a) Written off the accounts.
(b) Revenue relates to other circles.

Revenue received and outstandings on account of revenue during 1922–23—*cont.*

District.	Particulars.	Outstandings at commencement of year.	Value of sales and other revenue during year.	Total.	Amount realized during year.	Balance due to the department at end of year.
Fifth Circle.		Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.	Rs. A. P.
Kollegal	Timber and other forest produce.	1,142 13 3	1,16,025 8 6	1,17,168 5 9	* 1,15,963 4 6 538 9 3	666 8 0
Coimbatore, North	Do.	38,055 11 10	3,58,505 7 9	3,96,561 3 7	* 3,60,557 14 1 663 5 10	35,339 15 8
Do. South	Do.	70,893 6 2	3,61,547 4 11	4,32,440 11 1	(a) 3,65,091 11 1	67,349 0 0
Madura	Do.	51,161 14 7	1,35,819 3 10	1,86,981 2 5	* 1,67,809 6 2 873 2 4	18,298 9 11
Tinnevelly	Do.	73,312 4 0	2,41,463 9 0	3,14,775 13 0	* 2,34,939 12 3 60,394 14 0	19,441 2 9
Direction	Do.	..	343 14 9	343 14 9	343 14 9	..
Forest Engineer	Do.	..	130 1 3	130 1 3	130 1 3	..
Sixth Circle.	Total ..	2,34,566 1 10	12,13,835 2 0	14,48,401 3 10	12,44,836 0 1 * 62,469 15 5	1,41,095 4 4
Mangalore, North	Timber and other forest produce.	17,770 4 1	1,20,468 0 10	1,38,238 4 11	1,12,253 9 10 (a) 20,444 8 0	5,540 3 1
Do. South	Do.	4,286 15 10	1,23,683 0 7	1,27,970 0 5	1,16,881 11 0 (a) 75 14 2	11,012 7 3
Wynaad	Do.	1,03,539 6 5	1,29,503 13 10	2,33,043 4 3	1,84,972 3 3 (a) 408 10 0	97,662 7 0
Nilambur	Do.	35,210 12 4	2,49,061 6 7	2,84,272 2 11	2,17,600 11 1 (a) 22,181 14 8	44,489 9 2
The Nilgiris	Do.	7,948 11 2	1,73,863 5 2	1,81,812 0 4	1,68,379 12 8 (a) 280 2 5	18,152 1 3
Palghat	Do.	1,391 9 7	1,40,253 1 8	1,41,644 11 3	93 021 0 9 (a) 600 0 0	48,023 10 6
Forest Exploitation Division.	Do.	14,761 12 0	86,394 3 4	1,01,155 15 4	94,079 6 4	7,076 9 0
Forest Research Division ..	Do.	..	244 8 8	244 8 8	244 8 8	..
Direction	Do.	..	43 0 0	43 0 0	43 0 0	..
	Total ..	1,84,909 7 5	10,23,514 8 8	12,08,424 0 1	9,32,475 15 7 (a) 43,991 1 8	2,31,956 15 8
Grand total, Presidency ..		6,40,121 3 6	53,83,942 2 6	60,24,063 6 0	53,51,165 13 11	6,72,897 8 1

Note for Fifth Circle.
- * Written off the accounts.
- (a) Includes Rs. 1,103 pertaining to Sixth Circle.

Note.—Of the total outstandings of Rs. 1,41,095-4-4 the amount actually due on or before 31st March 1923 was Rs. 25,921-8-10.

Note for Sixth Circle.
- (a) Amount written off or removed from demand owing to cancellation of sales.

Note.—Out of the total outstandings of Rs. 2,31,953-15-3 the amount actually due on or before 31st March 1923 was Rs. 1,75,185-2-1.

Annual Form No. 83.

Forest Department, Madras Presidency.

Financial results for the year 1922–23.

District.	Timber and other produce removed from the forests by Government Agency.		Other revenue.		Formation, protection and improvement of forests.	Total.	
	Receipts.	Charges.	Receipts.	Charges.	Charges.	Receipts.	Charges.
First Circle.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Ganjam	26,708	1,11,908	70,422	62,068	39,167	97,130	2,13,143 (*f*) 40,000
Vizagapatam	1,158	1,660	41,545	45,981	10,342	42,703	57,983
Godavari, Upper ..	38,460	22,302	52,331	51,314	38,310	90,821	1,11,926
Do. Lower ..	431	8,296	2,23,064	92,658	15,247	2,23,495	1,16,901
Kistna	52	1,774	93,167	39,560	10,633	93,219	51,967
Total ..	6,809	1,46,640	4,80,559	2,91,581	1,13,699	5,47,368 (*h*) + 34,267 (*a*) — 6,942	5,51,920 (*h*) + 41,992 (*f*) + 40,000
						5,74,693	6,33,912
Second Circle.							
Bellary	84	..	1,08,167	63,061	20,771	1,08,251	83,832
Anantapur	..	..	1,82,669	64,823	26,296	1,82,669	91,119
Guntur	6	18	1,58,263	79,573	33,729	1,58,269	1,13,320
Kurnool, East ..	18,192	8,074	56,753	61,822	27,664	74,945	97,560
Do. South ..	11,983	1,328	87,809	71,525	28,410	99,792	1,01,263
Do. West ..	41,312	15,069	87,072	1,02,580	48,628	1,28,384	1,66,277
Total ..	71,577	24,489	6,80,733	4,43,384	1,85,498	7,52,310	6,53,371
Third Circle.							
Cuddapah, North ..	72	11	47,012	57,165	21,693	47,084	78,869
Do. South ..	6,008	2,980	43,632	69,952	34,520	49,640	1,07,452
Do. West ..	126	..	78,093	66,186	29,527	78,219	95,713
Nellore	17,706	6,256	1,62,943	84,283	32,079	1,80,649	1,22,618
Chingleput	81	..	58,046	45,513	19,977	58,127	65,490
Chittoor	1,385	791	1,48,456	98,035	51,211	1,49,841	1,50,037
Vellore, North ..	690	441	1,27,859	41,742	23,866	1,28,549	66,049
Total ..	26,068	10,479	6,66,041	4,62,876	2,12,873	6,92,109 (*a*) — 3,114	6,86,228 (*e*) + 7
						6,88,995	6,86,235
Fourth Circle.							
Vellore, South ..	68,969	6,774	1,64,069	60,365	(*b*) 93,590	2,33,038	1,60,729
Do. West ..	61,160	9,860	77,242	53,778	16,076	1,38,402	79,714
Salem, East	17,909	2,563	1,87,045	69,688	15,608	2,04,954	87,859
Do. North	1,52,473	25,613	47,839	49,090	16,568	2,00,312	91,271
Do. Central ..	2,203	1,550	94,817	56,348	12,977	97,020	70,875
Do. South	21,819	3,610	1,89,206	72,609	11,468	2,11,025	87,687
Total ..	3,24,533	49,970	7,60,218	3,61,878	1,66,287	(*c*) 10,84,751 (*a*) — 25,779	5,78,135 (*e*) — 13
						(*c*) 10,58,972	5,78,122
Fifth Circle.							
Kollegal	46,330	7,595	67,700	60,517	13,317	1,14,030	81,429
Coimbatore, North ..	2,18,916	23,588	1,41,575	86,624	18,055	3,60,491	1,28,267
Do. South ..	2,54,526	1,83,564	1,09,403	33,305	99,774	3,63,929	3,16,643
Madura	6,472	3,986	1,60,577	78,259	44,414	1,67,049	1,26,659
Tinnevelly ..	740	3,841	2,34,068	86,999	24,767	2,34,808	1,15,607
Total ..	5,26,984	2,22,574	7,13,323	3,45,704	2,00,327	12,40,307	7,68,605 (*e*) — 231
							7,68,374
Sixth Circle.							
Mangalore, North ..	30,316	12,083	81,944	51,298	23,434	1,12,260	86,815
Do. South ..	72,402	* 62,424	44,487	32,427	27,246	1,16,889	1,22,097
Wynaad	84,172	* 88,608	50,808	25,137	35,130	1,34,980	1,48,875
Nilambur	2,06,842	* 1,43,892	10,766	10,171	66,473	2,17,608	2,20,536
The Nilgiris	56,663	* 1,15,525	1,06,725	51,733	42,540	1,63,388	2,09,798 (*d*) + 8,823
Palghat and Forest Exploitation office.	89,815	1,21,064	97,291	46,975	68,584	1,87,106	2,36,623
Forest Research office..	..		245	..	27,563	245	27,563
Total ..	5,40,210	5,43,596	3,92,266	2,17,741	2,90,970	9,32,476 (*a*) — 4,135	10,52,307 (*d*) + 8,823 (*e*) + 8
						9,28,341	10,61,138
Grand total, Presidency.	15,56,181	9,97,748	36,93,140	21,23,164	11,69,654	52,49,321 (*h*) + 34,267 (*g*) + 36,472 (*i*) + 197 (*e*) — 7,330 (*n*) — 39,970	43,81,152 (*g*) + 1,40,935 (*k*) + 17,893 (*l*) + 2,03,307 (*m*) + 20,473 (*e*) + 25,703
						52,72,957	47,89,463

(*a*) Refunds and drawbacks.

(*b*) Includes charges incurred by the Forest Engineer on road works in the Javadis.

(*c*) Excludes Rs. 760 being sandalwood revenue realized for other circles and includes refunds.

(*d*) Rupees 5,923—expenditure on Madras Forest College camp huts and Rs. 2,900 leave pay of Mr. H.W.A. Gaudoin, Deputy Conservator of Forests.

(*e*) Added or deducted as per Accountant-General's audited figures.

(*f*) Investment on Government undertakings in Ganjam.

(*g*) Receipts and expenditure relating to the Forest College, Coimbatore.

(*h*) Receipts and expenditure relating to Parlakimedi Maliahs.

(*i*) Receipts relating to the Office of Chief Conservator of Forests.

(*k*) Expenditure relating to the special panchayat staff.

* Includes expenditure on live-stock.

(*l*) 8 Forests—A. General Direction.

(*m*) Loss or gain by exchange transaction with England.

(*n*) Refunds and drawbacks.

ANNUAL FORM No. 84.

PART I.

Forest Department, Madras Presidency.

Statement of elephants and other live-stock during 1922–23.

District.	On hand at the commencement of the year.		Number received during the year.	Number disposed of during the year.	On hand at the end of the year.		Total expenditure on maintenance during the year.
	Number.	Value.			Number.	Value.	
(1) ELEPHANTS.							
First Circle.							
Godavari, Upper	2	Rs. 3,700	..	..	2	Rs. 3,700	Rs. a. p. 2,094 9 0
Second Circle.							
Kurnool, West	2	5,000	..	..	2	5,000	1,990 0 0
Third Circle—Nil.							
Fourth Circle—Nil.							
Fifth Circle.							
Coimbatore, South	26	89,500	10	14	22	84,800	27,039 12 5
Sixth Circle.							
Mangalore, South	2	10,000	2	1	3	12,500	3,068 4 0
Wynaad	21	74,300	15	6	30	91,800	19,523 2 9
Nilambur	7	31,500	22	3	26	97,550	31,094 4 7
The Nilgiris	77	1,82,900	13	62	28	62,200	36,369 3 9
Total ..	107	2,98,700	52	72	87	2,64,050	90,054 15 1
Grand Total—Elephants—Presidency.	137	3,96,900	62	86	113	3,57,550	1,21,178 11 6
(2) OTHER LIVE-STOCK.							
First Circle.							
Ganjam	44	2,231	..	18	26	1,376	3,169 7 3
Second Circle.							
Kurnool, West	10	715	..	5	5	525	254 0 0
Kurnool, South	..	..	2	..	* 2	50	† 55 0 0
Total ..	10	715	2	5	7	575	309 0 0
Third Circle.							
Chingleput	1	35	..	..	1	35	30 0 0
Chittoor	3	122	..	..	3	122	2 0 0
Total ..	4	157	..	..	4	157	32 0 0
Fourth Circle—Nil.							
Fifth Circle.							
Coimbatore, South	68	5,095	18	9	77	6,490	18,393 10 4
Sixth Circle.							
Mangalore, South	10	845	..	2	8	663	2,836 13 0
Wynaad	42	3,201	10	42	10	1,735	1,592 13 4
Nilambur	8	..	35	7	36	2,648	5,058 6 10
The Nilgiris	23	3,369	3	11	15	1,774	9,544 0 6
Palghat	58	4,564	..	58	..	..	12,979 5 3
Forest exploitation ..	..	..	58	14	44	3,164	
Total ..	141	11,979	106	134	113	9,979	32,011 6 11
Grand Total—Other Live-stock—Presidency.	267	20,177	126	166	227	18,577	53,915 8 6

* These bulls were those confiscated in a Forest case.

† This amount was debited to A VII (b) as bulls were employed on building works sanctioned under the head.

PART II.

Forest Department, Madras Presidency.

Statement of elephants gone off the list during the year 1922–23.

District.	Names.	When purchased or otherwise obtained by Government.	Age.	How disposed of.
		First Circle—Nil.		
		Second Circle—Nil.		
		Third Circle—Nil.		
		Fourth Circle—Nil.		
		Fifth Circle.	YRS.	
Coimbatore, South.	1. Kaveri ..	Captured on 25th September 1920	25	Died on 3rd August 1922.
	2. Unni	Do. 26th August 1920	25	Sold.
	3. Gripa	Do. 13th August 1920	5	
	4. Krishnaveni ..	Do. 19th September 1920	4	
	5. Arjuna ..	Do. 8th September 1921	6	
	6. Gouri	Do. 24th September 1921	3	Died on 3rd May 1922.
	7. Bibi	Do. 23rd October 1921	20	Do. 17th Mar. 1923.
	8. Bali	Do. 3rd November 1921	5 months.	Do. 8th April 1922.
	9. Gopalan ..	Do. 20th November 1921	5	Sold.
	10. Neeli	Do. 20th July 1922	23	Died on 28th Mar. 1923.
	11. Bali	Do. 20th July 1922	4	Sold.
	12. Tara	Do. 23rd August 1922	5	
	13. Rambah ..	Do. 30th August 1922	4½	
	14. Tippu	Do. 14th December 1922	3	
		Sixth Circle.		
Mangalore, South.	1. Meenakshi ..	Born 1889	34	Transferred to Wynaad division.
Wynaad ..	1. Tyno	Captured on 1st March 1917	20	Transferred to the Nilgiris.
	2. Sankaran ..	Born on 2nd August 1920	2	Sold.
	3. Ganga	Captured on 3rd April 1922	5	Sold.
	4. Kowsalya ..	Do. 2nd March 1922	20	Died on 29th August 1922.
	5. Sumathri ..	Do. 19th March 1922	7	Do. 20th August 1922.
	6. Meenakshi ..	Born 1889	34	Transferred to the Nilgiris.
Nilambur ..	1. Damayanti ..	Captured on 29th April 1914	31	Sold.
	2. Norah	Do. 12th March 1906	23	
	3. Dostijehan ..	Born on 30th May 1922	..	Died on 21st June 1922.
The Nilgiris.	1. Jamperi ..	Purchased 1903	47	Transferred to Nilambur division.
	2. Padmini ..	Captured on 10th February 1896	52	Transferred to V Circle.
	3. Savitri	Do. 14th May 1912	44	Transferred to Nilambur division.
	4. Damayanti ..	Do. 29th April 1914	32	
	5. Hafiz	Do. 5th March 1917	21	Transferred to V Circle.
	6. Willingdon ..	Born on 3rd January 1918	4	Sold.
	7. Shambagam ..	Captured on 26th September 1918	18	Transferred to Nilambur division.
	8. Bakir Ali ..	Do. 10th May 1911	22	Transferred to South Mangalore.
	9. Kalyani ..	Do. 26th February 1918	10	Sold.
	10. Punachi ..	Do. 22nd April 1918	34	Transferred to Nilambur.
	11. Janaki	Do. 23rd February 1919	8	Sold.
	12. Subadar ..	Do. 24th January 1919	11	
	13. Ranganayaki ..	Do. 9th February 1919	28	
	14. Kalid	Do. 9th February 1919	9	
	15. Siva	Do. 3rd March 1919	13	
	16. Pratab Singh ..	Do. 29th April 1919	9	
	17. Irene ..	Do. 1st April 1919	9	
	18. Sivaje	Do. 29th March 1919	18	
	19. Beegum ..	Transferred from Ganjam	26	
	20. Ali Baba ..	Captured on 29th January 1920	10	
	21. Balakrishna ..	Do. 12th February 1920	6	
	22. Marree ..	Do. 20th March 1905	26	Transferred to Nilambur division.
	23. Kamala ..	Do. 3rd February 1912	29	Transferred to South Mangalore.
	24. Forester ..	Do. 16th March 1906	23	Transferred to Nilambur.
	25. Sankar ..	Do. 21st May 1907	20	Sold.
	26. Rholly	Do. 17th April 1906	21	Transferred to V Circle.
	27. Rathi	Do. 5th April 1921	7	Sold.
	28. Rahu	Do. 5th April 1921	8	
	29. Paru	Do. 24th February 1921	5	
	30. Sundari ..	Do. 27th February 1921	2	
	31. Mohun	Do. 23rd December 1919	7	
	32. Ganesh ..	Do. 3rd August 1919	11	
	33. Narayani ..	Do. 11th September 1919	11	
	34. Sundar ..	Do. 7th July 1919	5	

Statement of elephants gone off the list during the year 1922-23—*cont.*

District.	Names.	When purchased or otherwise obtained by Government.	Age.	How disposed of.
		Sixth Circle—cont.		
			YRS.	
—	35. Rukmani ..	Captured on 22nd December 1919	9	Died on 18th April 1922.
	36. Haig	Born on 26th November 1918	4	Sold.
	37. Pooh	Do. 17th November 1918	4	
	38. Godavari ..	Captured on 12th March 1915	36	
	39. Bhavani ..	Do. 9th April 1913	20	
	40. Norah ..	Do. 12th March 1906	25	
	41. Kuroki ..	Do. 9th February 1905	24	
	42. Sutlej	Do. 27th February 1902	31	
	43. Seetha	Do. 13th September 1895	32	Transferred to Nilambur division.
	44. Kuttiparu ..	Do. 25th August 1907	22	
	45. Libera	Do. 7th March 1909	28	
	46. Jhelum ..	Do. 27th June 1902	33	
	47. Thamburatti ..	Do. 3rd February 1913	21	
The Nilgiris —*cont.*	48. Theebaw ..	Do. January 1886	44	
	49. Sirdar	Do. 7th August 1906	21	
	50. Taj Mahal ..	Do. 3rd February 1921	6	
	51. Ganapathy ..	Do. 17th February 1921	6	Sold.
	52. Parvati ..	Do. 19th March 1921	26	
	53. Sarada	Do. 19th March 1921	6	
	54. Gowri	Do. 19th May 1921	26	Died on 13th May 1922.
	55. Yesoda ..	Do. 19th May 1921	21	
	56. Kamalam ..	Do. 19th May 1921	3	
	57. Arjuna	Do. 21st May 1921	5	
	58. Kowsalya ..	Do. 1st February 1922	5	Sold.
	59. Bhima	Do. 1st February 1922	3	
	60. Prince	Do. 4th February 1922	13	
	61. Indra	Do. 5th February 1922	1	
	62. Sathyabhama ..	Do. 11th April 1922	3	

Annual Form No. 85.

Forest Department, Madras Presidency.

Abstract showing the value of stores, tools and plant for 1922-23.

District.	Buildings.				Stores.				Total.				*Difference in value.	
	On hand at the commencement of the year.		On hand at the end of the year.		On hand at the commencement of the year.		On hand at the close of the year.		On hand at the commencement of the year.		On hand at the close of the year.		In favour of the year.	Against the year.
	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.	Number.	Value.		
First Circle.		Rs.		Rs.		Rs.		Rs.		Rs.		Rs.	Rs.	Rs.
Direction ..	1	400	1	400	369	4,350	369	4,350	370	4,750	370	4,750	..	..
Ganjām ..	123	50,938	102	48,719	4,803	11,152	9,610	25,614	4,926	62,090	9,712	74,333	12,243	..
Vizagapatam ..	66	13,466	67	12,054	1,768	4,486	1,748	4,901	1,834	17,952	1,815	16,955	..	1,007
Gōdāvari, Upper.	126	38,430	134	40,005	3,652	15,183	3,610	16,556	3,778	53,613	3,744	56,561	2,948	..
Gōdāvari, Lower.	157	45,250	159	44,698	2,341	5,848	2,585	6,296	2,498	50,598	2,744	50,994	396	..
Kistna ..	36	6,656	34	6,168	2,257	17,607	1,904	16,982	2,293	24,263	1,938	23,150	..	1,113
Total ..	509	1,55,140	497	1,52,044	15,190	58,126	19,826	74,699	15,699	2,13,266	20,323	2,26,743	13,477	..
Second Circle.														
Direction ..	..	..	..	..	231	7,084	250	6,768	231	7,084	250	6,768	..	316
Bellary ..	38	41,578	27	39,135	3,688	14,667	3,718	14,393	3,726	56,245	3,745	53,528	..	2,717
Anantapur ..	32	50,629	30	47,559	3,593	5,974	3,600	5,858	3,625	56,603	3,630	53,417	..	3,186
Guntūr ..	28	14,215	27	16,920	6,037	9,653	5,873	10,661	6,065	23,868	5,900	27,581	3,713	..
Kurnool, East.	82	72,292	75	73,563	3,996	11,800	4,686	12,254	4,078	84,092	4,761	85,817	1,725	..
Do. South.	68	51,802	68	45,716	2,555	7,702	2,479	9,414	2,623	59,504	2,547	55,130	..	4,374
Do. West.	67	93,795	68	94,587	4,474	23,058	4,732	23,254	4,541	1,16,853	4,800	1,17,841	988	..
Total ..	315	3,24,311	295	3,17,480	24,574	79,938	25,338	82,602	24,889	4,04,249	25,633	4,00,082	..	4,167
Third Circle.														
Direction ..	..	..	..	..	319	3,802	308	3,611	319	3,802	308	3,611	..	191
Cuddapah, North.	47	22,784	47	25,635	1,513	4,520	1,550	5,065	1,560	27,304	1,597	30,700	3,396	..
Cuddapah, South.	54	52,085	61	65,139	2,669	10,631	2,623	10,969	2,723	62,716	2,684	76,108	13,392	..
Cuddapah, West.	34	13,276	35	16,073	2,276	6,121	2,590	5,697	2,310	19,397	2,625	21,770	2,373	..
Nellore ..	47	26,463	53	33,654	39,640	39,139	42,612	38,796	39,687	65,602	42,665	72,450	6,848	..
Chingleput ..	26	15,635	22	26,629	2,436	3,807	2,444	4,723	2,462	19,442	2,466	31,352	11,910	..
Chittoor ..	47	33,713	42	32,856	4,112	11,621	3,242	14,062	4,159	45,334	3,284	46,918	1,584	..
Vellore, North.	36	19,799	38	23,847	2,501	4,975	2,489	5,348	2,537	24,774	2,527	29,195	4,421	..
Vernacular Training School.	..	..	..	..	670	1,644	670	1,484	670	1,644	670	1,484	..	160
Total ..	291	1,83,755	298	2,23,333	56,136	86,260	58,528	89,755	56,427	2,70,015	58,826	3,13,588	43,573	..
Fourth Circle.														
Direction ..	..	..	..	..	225	1,681	226	2,946	225	1,681	226	2,946	1,265	..
Vellore, South.	49	39,716	51	46,953	2,403	5,663	2,479	6,020	2,452	45,379	2,530	52,973	7,594	..
Do. West.	38	30,029	39	33,337	2,878	6,065	3,153	7,495	2,916	36,094	3,192	40,832	4,738	..
Salem, East ..	61	31,111	59	29,020	2,721	14,048	4,363	16,749	2,782	45,159	4,422	45,769	610	..
Do. North..	57	29,670	58	33,235	2,257	30,325	2,426	26,632	2,314	59,995	2,484	59,865	..	130
Do. Central.	71	53,103	63	45,900	2,743	12,563	2,485	12,180	2,814	65,666	2,548	58,080	..	7,586
Do. South..	55	33,795	57	36,327	5,061	10,220	5,416	10,950	5,116	44,015	5,473	47,277	3,262	..
Vernacular Training School.	..	..	..	..	946	4,356	568	4,120	946	4,356	568	4,120	..	236
Total ..	331	2,17,424	327	2,24,770	19,234	84,921	21,116	87,092	19,565	3,02,345	21,443	3,11,862	9,517	..
Fifth Circle.														
Direction ..	1	52	1	49	388	3,664	334	3,845	389	3,716	335	3,894	178	..
Kollegal ..	43	33,298	44	44,557	50,764	5,805	80,950	6,673	50,807	39,103	80,994	51,230	12,127	..
Coimbatore, North.	92	1,01,867	85	1,01,046	2,392	10,153	2,202	10,080	2,484	1,12,020	2,287	1,11,126	..	894
Do. South.	71	53,299	69	57,158	23,465	49,594	3,114	27,799	23,536	1,02,893	3,183	84,957	..	17,936
Madura ..	126	1,06,670	125	1,04,917	3,194	4,778	3,201	4,871	3,320	1,11,448	3,326	1,09,788	..	1,660
Tinnevelly ..	109	55,856	208	57,855	1,769	5,709	2,525	7,278	1,878	61,565	2,733	65,133	3,568	..
Vernacular Training School.	..	..	..	..	484	2,346	501	1,297	484	2,346	501	1,297	..	1,049
Working Plans Office.	..	..	..	..	256	1,503	256	1,503	256	1,503	256	1,503	..	..
Total ..	442	3,51,042	532	3,65,582	82,712	83,552	93,083	63,346	83,154	4,34,594	93,615	4,28,928	..	5,666
Sixth Circle.														
Direction ..	..	..	..	..	173	4,702	217	5,132	173	4,702	217	5,132	430	..
Mangalore, North.	51	29,800	54	27,992	765	4,770	858	4,863	816	34,570	912	32,855	..	1,715
Do. South.	35	34,875	39	34,020	873	4,262	891	5,697	908	39,137	930	39,717	580	..
Wynaad ..	94	68,514	95	87,426	2,645	9,747	2,606	11,551	2,739	78,261	2,701	98,977	20,716	..
Nilambur ..	(b)..	(b) ..	31	36,615	(b)..	(b) ..	744	10,648	(b) ..	(b) ..	775	47,263	(b) ..	(b) ..
The Nilgiris ..	76	39,723	77	42,863	2,646	12,053	2,670	11,455	2,722	51,776	2,747	54,318	2,542	..
Palghat ..	50	16,747	39	23,483	2,990	94,543	949	7,811	3,040	1,11,290	988	31,294	..	79,996
Forest Exploitation officer.	..	..	9	37,415	..	..	20,118	84,740	..	..	20,127	1,22,155	1,22,155	..
The Forest Research officer.	3	732	2	674	(a) 176	(a) 3,360	180	3,089	(a) 179	(a) 4,092	182	3,763	..	329
Total ..	309	1,90,391	346	2,90,488	10,268	1,33,437	29,233	1,44,986	10,577	3,23,828	29,579	4,35,474	(c) 1,46,423	(c)82,040
Grand total, Presidency.	2,197	14,22,063	2,295	15,79,197	2,08,114	5,31,234	2,47,124	5,42,480	2,10,311	19,53,297	2,49,419	21,21,677	1,21,117	..

(a) Revised figure furnished by the Forest Research officer. (b) Figures for 1921-22 are not available.
(c) The difference in value for Nilambur division has not been taken into account.

Government of Madras

DEVELOPMENT DEPARTMENT

G.O. No. 315, 18th February 1924

Administration report—Forest Department—1922-23—Recorded with remarks.

READ—the following paper:—

Proceedings of the Chief Conservator of Forests, No. 759, dated 28th September 1923.

H. TIREMAN, Esq., I.F.S.,

Acting Chief Conservator of Forests.

I have the honour to submit the progress report of Forest Administration in the Madras Presidency for the year ending 31st March 1923, with the following review:—

CONSTITUTION OF STATE FORESTS.

ALTERATION IN AREA.

2. Two hundred and forty-nine square miles of reserved lands were finally settled under the Forest Act including the Nugur block in the Bhadrachalam Agency with an area of 245 square miles. About 48 square miles were disforested to provide for the extension of cultivation, chiefly in Bellary (8 square miles), Anantapur (16 square miles), Guntūr (5 square miles), West Cuddapah (6 square miles), Chingleput, Kurnool West, Vellore South and Central Salem (2 square miles each). The net result was an increase of 202 square miles in the area of reserved forests which at the end of the year amounted to 19,064 square miles. The area of reserved lands, owing to the operation of forest settlement, decreased from 442 to 192 square miles.

FOREST SETTLEMENT.

3. Two hundred and forty-nine square miles were constituted reserved forests, 245 square miles being in the Upper Gōdāvari division. At the end of the year settlement operations were in progress in respect of 163 square miles, 75 of which are in the Nilgiris.

DEMARCATION.

4. About 84½ miles were demarcated during the year chiefly in the districts of Chingleput, Upper Gōdāvari, Salem South and Wynad at a cost of Rs. 3,277. Six hundred and eighty-four miles remained to be demarcated at the close of the year chiefly in South Salem, Kollegal, North Coimbatore and Madura.

SURVEY.

5. A Survey of India party worked the Cherla range of the Upper Gōdāvari division, in connexion with the survey of some Great Trigonometrical Stations; and another surveyed 289 square miles of reserves in the Anantapur, West Cuddapah and Chittoor divisions.

MANAGEMENT.

WORKING PLANS.

6. Working plans for an area of 80 square miles and a working scheme for the Coringa Mangrove forests in the Lower Gōdāvari division were sanctioned. To meet the demands of the villagers for agricultural implements and small timber, tentative schemes were prepared and sanctioned for certain areas in Kollegal and North and South Coimbatore. The question of the preparation of working plans for the more important timber forests is a very pressing one. Progress has been impossible of recent years owing to the depletion of the staff; but it is hoped that with the advent of the Chief Forest Engineer and now that there should shortly be several young Assistant and Extra Assistant Conservators available, a beginning will be made during the current year.

ROADS AND COMMUNICATIONS.

7. Two hundred and four miles of roads were constructed at a cost of Rs. 1,37,605 and 1,242 miles were repaired at a cost of Rs. 95,504. Rupees 57,485 was spent on.

the two roads in the Javadi Hills; of these one was completed while only a small quantity of work is necessary to complete the other. On the Mount Stuart Ghat road Rs. 44,241 was spent; but owing to trouble with contractors and the malarious nature of the locality the progress made was comparatively poor. I have recently inspected this road and in my opinion it is being made on a far too elaborate scale; reinforced concrete culverts and steel girder bridges over small streams are scarcely called for on a forest road and I propose deputing the Chief Forest Engineer as soon as he arrives to inspect the road and to report whether the work could not be carried out in a considerably cheaper manner. Rupees 11,951 was spent on the collection of metal for metalling the Chedleth-Sultan's Battery road in Wynad.

Buildings.

8. The total expenditure on buildings amounted to Rs. 1·62 lakhs against Rs. 2·52 lakhs in the previous year. A sum of Rs. 17,006 was spent during the year on the reconstruction and restoration of buildings at Nilambur damaged during the Mappilla rebellion. In the Chenat Nair exploitation division the total amount spent on new construction and repairs was Rs. 15,861. Miscellaneous buildings such as inspection bungalows, range offices, ranger's quarters and subordinates' lines were constructed in various divisions. Work was much curtailed during the year owing to financial stringency. Buildings are urgently required more especially in the larger timber forests and the necessity for considerable expenditure in this direction will shortly have to be faced.

Other works.

9. A sum of Rs. 12,644 was spent on the construction and repair of tanks and wells and on the improvement of water-supply in the forests.

In regard to the question of improvement of grazing grounds referred to in the last year's report, District Forest Officers have been directed to examine the possibility of providing increased water facilities for cattle in forests where there is much grazing. Some work in this direction was carried out during the year but it is not clear from the reports of the Conservators how much was spent.

The Conservator of Forests, III Circle, reports that private people have been encouraged to construct and improve watering places and that a new pool was constructed and an old one repaired by private agency at a cost of Rs. 700.

LIVE-STOCK—ELEPHANTS.

10. The number of elephants in charge of the department at the beginning of the year was 137 valued at Rs. 3,96,600 including four baggage elephants working in Upper Gōdāvari and Kurnool West Divisions. Thirty-two elephants were captured, 3 were born in captivity, 10 died, 49 were sold for Rs. 1,17,625 and the stud at the end of the year was 113 valued at Rs. 3,57,550.

Capturing operations were conducted in South Coimbatore, the Nilgiris, Wynad and Nilambur and resulted in 32 captures, viz., 9 in the Nilgiris, 14 in Wynad, 2 in Nilambur and 7 in South Coimbatore. Of the South Coimbatore captures six were caught in the Tekkadi leased forests, and under the terms of the agreement with the Kollengode Raja, four were sold to him for Rs. 2,900 (half value), one tusker being retained by the department on payment of half its value, viz., Rs. 3,000. The remaining animal died. The cost of the operations was Rs. 7,222. It has not been reported what the 32 elephants captured are worth, but their value is probably at least Rs. 50,000; it will therefore be seen that these operations were a considerable financial success.

Cattle.

11. Two hundred and sixty-seven buffaloes and bullocks were in stock at the beginning of the year; 63 died or were sold, 21 were purchased and 2 were confiscated in a forest case in South Kurnool and added to the stud. The stock at the end of the year was 227 animals with a book value of Rs. 18,577.

FOREST CONSERVANCY.

General Protection.

12. With the decline of the non-co-operation movement, lawlessness was much less in evidence especially in Guntūr where it is reported that people detected in the commission of forest offences were willing to compound rather than go to court. The

employment of punitive police in West Cuddapah has had a marked effect not only in this division but also in the other divisions of the district and in the adjoining Chittoor district.

Breaches of the Forest Act.

13. The following table compares the forest offences of all kinds reported during the year with those of the previous year:—

Cases.	Injury to forests by fire.		Unauthorized felling.		Unauthorized grazing		Other offences.		Total.		Average of three years ending 1921-22.
	1921-22.	1922-23.	1921-22.	1922-23.	1921-22.	1922-23.	1921-22.	1922-23.	1921-22.	1922-23.	
Cases taken to court.	25	31	5,356	5,132	1,776	1,636	383	381	7,540	7,180	6,815
Cases recommended for compensation.	37	74	13,610	16,579	5,134	6,043	810	1,015	19,591	23,711	18,377
Cases undetected.	1,349	1,505	493	452	45	19	22	7	1,909	1,983	1,649
Total ..	1,411	1,610	19,459	22,163	6,955	7,698	1,215	1,403	29,040	32,874	26,841

There was an increase in the number of offences in each class. The increase was fairly equally distributed over the III, IV, V and VI Circles. It is generally attributed to more vigilance on the part of the protective staff. The increase chiefly occurred under the head of unauthorized felling which as usual accounts for a great part of the forest crime. This class of crime appears to be commonest in the IV Circle which contributed 34 per cent of the total number of cases. Of the 30,878 cases disposed of during the year (including the pending cases of the previous year), 7,491 cases were taken to court, 20,790 cases were compounded and 2,597 cases were withdrawn. Of the cases disposed of by magistrates, 6,149 ended in conviction and 1,342 in acquittal, the percentage of failure thus being nearly 18 per cent. More than 50 per cent of the acquittals occurred in the III Circle where there were 695. The Conservator of this circle explains that only 131 of these were acquitted by magistrates on their demerits; 33 were withdrawn and 531 compounded after they had been taken on to the magistrate's file. Cases withdrawn or compounded *after* they have been taken on to the magistrate's file are shown as 'acquittals' in accordance with the instructions of Government in paragraph 4 (8) of G.O. No. 2097, Revenue, dated 12th July 1917.

The fact that cases are shown as "acquitted" does not therefore of necessity mean that their merits have been inquired into.

The amount of compounding fees realized during the year was Rs. 2,72,080. The average fee per case and person was Rs. 13-5-7 and Rs. 6-3-6 respectively against Rs. 13-7-4 and Rs. 6-2-1 in the previous year.

In paragraph 18 of his report, the Conservator, III Circle, compares the fees realized in compounding offences committed in reserved forests and those relating to offences in unreserved land. Eliminating grazing cases in which considerable numbers of cattle (especially goats) are generally involved and the levy of a heavy compounding fee is justifiable, the Conservator finds that the offences in forest reserves in his circle were compounded at an average of Rs. 7-1-0 per case and Rs. 2-8-0 per individual, while in unreserved lands where the offences do not include grazing, the average compounding fees levied by Revenue Divisional Officers were Rs. 11 per case and Rs. 6-6-0 per individual. This is, in the Conservator's opinion, an effective answer to the charge often unjustly levelled against the department that heavy compounding fees are levied by District Forest Officers without adequate discrimination and due sense of responsibility.

The same Conservator reports a marked improvement in the matter of prompt disposal of forest cases.

Fire Protection.

(*Calendar year* 1922.)

14. The system of early burning under departmental supervision, a short description of which was given in paragraph 15 of the review on last year's report, was considerably extended, upwards of 2,000 square miles being treated in this way in Upper Gōdāvari, Kurnool, Kollegal, North Coimbatore, South Coimbatore, South

Mangalore, Wynad and the Nilgiris. The results are reported to have been excellent while the cost is very considerably less than that of the more orthodox method of attempting to prevent fires. The remarks of the Conservator, VI Circle, on page 74 of the report to the effect that the compromise between complete protection and complete abandonment will answer fairly well only so long as supervision remains good are equally applicable to any work, forest or otherwise, and in this particular matter there is no reason why the work should be left to the lower subordinates. After an experience extending over many years, I am convinced that in most of our forests it is practically impossible entirely to prevent fires; the system of early burning which if properly worked does very little, if any, damage to the forest is much to be preferred to the expensive methods previously in vogue. The forest may be protected for a period but sooner or later fire is bound to occur; and when this does happen owing to the accumulation of combustible material during the period of successful protection, the damage far exceeds that done by early burning.

The year was particularly unfavourable in the III Circle, especially in the Cuddapah district. Since its close the system of early burning has been introduced into that district and it is hoped that results in future will be better though it is stated that the people do not like the system. In the other circles the results were slightly worse than those of the previous year chiefly owing to an unfavourable rainy season.

The total area over which special protection was attempted during the year was 5,480 square miles of which 597 square miles (10·9 per cent) were burnt. During the previous year the figures were 5,844 and 407 square miles and 7 per cent respectively.

SUPPLY.

Timber.

15. The output of timber during the year under review was 131,225 tons against 108,400 tons in the previous year. Twenty-nine thousand three hundred and seventy-five tons were extracted by departmental agency and 95,200 tons by purchasers against 20,825 and 81,675 tons respectively in the previous year. The increased departmental extraction is chiefly due to the resumption of operation in Nilambur suspended owing to the Mappilla rebellion and to an increase in exploitation in South Kanara district and the Chenat Nair forest (Palghat division). Most of the timber, referred to in paragraph 16 of the review on last year's report, sent to London was sold. Despite the fact that when it was shipped to London freights were at about their highest point, London port charges were excessive and trade was generally slack, the results are on the whole promising. The majority of the timber was *Terminalia tomentosa* (known in the London market as "Laurel Wood"). The average profit after deducting the cost of transport from Pollachi, agents' charges, etc., was Rs. 3–6–0 per c.ft. as compared with the normal selling price at Pollachi of Rs. 1–8–0. Freights have since considerably declined as have also the Port of London Authority charges and assuming that in future the prices obtained will be about the same as they have been of late there is good reason to hope that the profit will be in the neighbourhood of Rs. 4 per c.ft. This does not take into consideration the sales of "figured" laurel wood, three logs of which were recently sold for the extraordinarily high price of 54*s*. (Rs. 40–8–0) per c.ft. Unfortunately at present owing to the very serious depression in trade Messrs. Howard Brothers cannot undertake to sell any laurel wood; but, when trade improves, the prospects of this business would appear to be very bright.

Since the close of the year Messrs. Howard Brothers have been appointed sole agents to the Madras Government for the sale of Indian timber in Europe.

Fuel.

16. Twenty-one thousand and thirty-three tons of fuel were removed departmentally and 304,533 tons by purchasers. Prices of fuel in the large towns showed a tendency to decrease except in Tanjore and Madura where they remained stationary. The prices in Anantapur and Trichinopoly were Rs. 17–15–0 and Rs. 18 per ton respectively against Rs. 22–4–0 and Rs. 23 respectively in the previous year.

Bamboos.

17. The total value of bamboos removed from the forests by all agencies during the year under review was Rs. 4·08 lakhs against Rs. 3·21 lakhs in the previous year. It is to be feared that the revenue from this source will materially decrease in future owing to the almost universal flowering of the big bamboo (*Bambusa arundinacea*). This bamboo appears to require some 12 to 15 years to grow into mature clumps.

Sandalwood.

18. Four hundred and sixty-eight tons of sandalwood were sold for Rs. 5,54,358 —at Satyamangalam (222 tons), Tiruppattur and Vellore (246 tons), the average price realized being Rs. 1,182 against Rs. 1,160 in the previous year.

Grazing.

19. About 21 per cent of the total area of forests in the Presidency were closed to grazing, either wholly (16·4 per cent) or for part of the year (4·3 per cent). The areas closed were approximately the same as in the previous year.

For grazing in the open area of 16,108 square miles, permits were issued for 2,037,062 animals while 74,177 animals were allowed free grazing; the incidence works out to 4·08 acres per cow unit as compared with 5·75 acres in the previous year. The increase is due to an increase of 327,394 in the number of animals licensed to graze. This has only been partially explained by Conservators; it is due in part to revision of grazing schemes and probably also to the decline in the non-co-operation movement.

The revenue realized from grazing and fodder grass was Rs. 9,24,092 against Rs. 7,89,731.

In paragraph 28 of his report, the Conservator, III Circle, especially refers to the scheme of grazing in force in the Sriharikota range, Nellore district, for which I have sought the sanction of Government in my letter No. 2767/22–2, dated 22nd February 1923. Great difficulty has been experienced in the past in capturing the semi-wild cattle roaming in the Sriharikota forests and various attempts have been made to solve the problem, but without success. Under the scheme referred to which is reported to have worked successfully, a census is taken of all cattle frequenting the forests and the villagers pay a lump sum calculated at 8 annas per cow unit per annum. The advantages of the system are that prosecution for forest offences and impounding of cattle are unnecessary with the result that a cause of friction between the villagers and the department is eliminated. The scheme may possibly be extended with advantage to other forests where the limitation of cattle is not very essential.

REMOVAL OF FOREST PRODUCE BY RIGHT HOLDERS AND FREE GRANTEES.

20. The estimated value of forest produce removed by free grantees and right holders amounted to Rs. 62,207 against Rs. 56,208 in the previous year.

SYLVICULTURE.

General.

21. A distinct advance was made during the year in the direction of systematic operations for the establishment of young crops of valuable species, a matter which, it must be regretted, has been seriously neglected in this Presidency until quite recently. It is only of recent years that forest officers have been forced to realize that in the valuable deciduous forests natural regeneration, however much it is assisted, is not to be relied on to produce a sufficiency of young stock to take the place of the mature timber removed in the course of selection fellings. Clear felling followed by sowing or planting, and the efficient tending of the young crop so obtained is the system now adopted in the teak forests of Mount Stuart (South Coimbatore), Wynad and Mudumalai (Nilgiris). I recently inspected the work done at Mount Stuart where a young crop—almost entirely teak—has been established over some 160 acres; it is well grown and very even. The cost is comparatively high but the forest is fortunately situated within easy reach of a market which will probably absorb the produce of even the first thinnings and in these circumstances

the department can afford to spend more money on creation than would be admissible in more inaccessible localities. The success of the operations is remarkable and speaks volumes for the care and attention lavished on them by the Conservator and District Forest Officer. In Wynad 75 acres previously clear felled were sown with teak. I saw some of the work in October 1922, when the young seedlings looked promising but 50 per cent are since reported to have died, the cause not being stated. In the Wynad and the adjoining Nilgiri forests with markets some 50 miles away it is not possible to spend so much on weeding or to sow at the close espacement adopted at Mount Stuart and the experiment is being tried of sowing at the wide espacement of 12′ × 12′ which admits of more attention in the way of cultivation of the soil being devoted to individual seedlings. The experiment of planting 'stumps' is also being tried; the elevation is comparatively high for teak and young seedlings grow slowly and as the growth of stumps is considerably faster it is hoped that the adoption of this method of planting may reduce the necessity of weeding to a minimum. Clear fellings have also been adopted in Upper Gōdāvari and Kurnool. In the former division it was intended to rely on coppice growth to establish the new crop, but this is not sufficient and orders have been issued to undertake sowing or stump planting. The financial results of the fellings are so favourable that they justify expenditure on regeneration. Clear fellings continued in the Sal forests of Ganjām.

In South Kanara some 2,500 acres of deciduous forest were sown with *Hopea parviflora* and *Artocarpus hirsuta* (chiefly the former) with a considerable amount of success. I inspected some of this work in October. As the result of three years' cultural operations in this (from the forest improvement point of view) much neglected district, we have established a young crop of great potential value over an area of between 4,500 and 5,000 acres of forest, the old crop on which is badly grown and of poor quality. In this district also the very necessary work of aiding the prolific natural regeneration of Hopea was proceeded with.

In the evergreen forest of Chenat Nair the regeneration is on the whole satisfactory. From what I have recently seen in the Coorg evergreen forests there is every reason to hope that a considerable number of the young seedlings which exist on the ground before felling is commenced will survive the sudden exposure due to exploitation operations. Should however the number surviving not be sufficient to provide an adequate young crop, the results of sowing Hopea in Kanara prove that it is a comparatively simple matter to supply deficiencies with seedlings of this very valuable species either immediately or after one or two years when sufficient shade should have grown up to provide shelter during the dry weather.

In the Nilambur division 165 acres planted in 1921 which suffered from the neglect incidental to the Mappilla rebellion were restocked. A propos of the remarks of the Conservator, VI Circle, on page 75 of the report regarding the respective merits of sowing and planting, I cannot accept without further proof the statement that planted seedlings grow faster. Sowing cannot fail to be cheaper than planting and for this reason it will be continued on an experimental scale. Provided that burning is completed in good time, sowing should require less supervision than planting, and this proviso can be ensured by allowing the area to lie fallow for a year after felling, a method which, while it admittedly loses a year of growth, may to some extent tend to counteract the possible toxic effect on the soil of a continuance of one pure crop. In any case the adoption of this method should ensure an early and complete burn.

In the evergreen forests of Tinnevelly experimental work on regeneration of the evergreen species was continued on a considerable scale.

Much useful work was done in the way of sowing sandal. In Anantapur and the Nilgiris regular dibbling on a small scale was continued with some success, while in Kollegal, North Coimbatore and some of the divisions of the III Circle small patches were sown and watered with the object of constituting *foci* from which the seed will in course of time be spread by birds. In the IV Circle natural regeneration of sandal is plentiful, and work is confined to the tending of the young plants.

The total amount spent on planting operations during the year under review was Rs. 76,090 against Rs. 56,049 in the previous year. Cultural operations were carried out over a total area of 10,475 acres at a cost of Rs. 20,620 and regular plantation

was raised over an extent of 560 acres at a cost of Rs. 20,439·75 per cent of the total amount was spent on these operations in the V Circle (Rs. 14,982) and the VI Circle (Rs. 42,005).

I am very doubtful of the accuracy of the area (10,475 acres) over which cultural operations are reported to have been carried out. The figure is compiled from those furnished by the Conservators in form No. 75, but details have not been furnished. I am referring the matter to the Conservators for further report.

Research and Experiments.

22. Mr. J. M. Sweet, Assistant Conservator of Forests, was Forest Research Officer during the year except for one month. Experimental work was continued on the lines described in last year's report, but it was much hampered by the reduction of the allotment for travelling allowance. The third bulletin on research was issued during the year giving details of the work done in 1921–22. It is too early as yet to expect any definite results, but useful information is being obtained chiefly on the evergreen species.

DEVELOPMENT.

Russellkonda Saw Mill.

23. Messrs. Parry and Company, the Managing Agents, write as follows :—

"The Russellkonda Saw Mill was completed towards the end of the last financial period.

"The first few months of the year under reference were occupied with testing the machines under working conditions and training local labour to work them, and it was not until about July 1922 that conditions could be said to be normal.

"The total amount of timber milled during the year is therefore smaller than would be the case under ordinary circumstances.

"Sal logs, measuring 126,571 cubic feet, were put into the Mills and produced 41,318 cubic feet of first-class sawn timber. In addition to this, there was outturned a considerable quantity of timber in the form of firewood and second-class quality, saleable only in bulk, which was accounted for separately. It will be observed that the percentage of first-class timber received is very low, and this is fully accounted for by the small size of the logs supplied and their very interior quality.

"The cost of production, including establishment charges, transport, depreciation and all expenses of selling amounted to Rs. 81,811.

"The sales of timber realized Rs. 49,929, but there was a stock of 25,000 cubic feet of sawn timber on the last day of the year estimated to be worth Rs. 58,942.

"The prospects for the year are dependent entirely upon the type of timber which can be economically brought to the Mill.

"The Managing Agents have drawn attention to the fact that it has been possible to secure an outturn of only 32 per cent on account of the poor quality of the timber and that had this outturn been the normal one of, say, 45 per cent, the additional revenue would have been about Rs. 35,000.

"There is a steady demand for the timber, and buyers describe it as the best sawn Sal on the markets which it has penetrated."

Attention is being paid to the necessity for a more careful selection in the forests of timber to be supplied to this Mill and it is hoped that the outturn and in consequence the profits will improve in the current year.

24. An exploitation division was created during the year for the conduct of the operations in the Chenat Nair forest. The experimental sawing of a certain amount of soft woods at Trichur referred to by the Conservator at page 77 of the report showed that the timbers in question are likely to be suitable for the box trade. It is proposed this year to get the Trichur Mills saw sufficient of these timbers to place box shooks on the market in commercial quantities. It was never intended originally that timber should be sent all the way from Olavakot to Trichur to be sawn as the railway freight must naturally absorb a large part of any possible profits. A more economical method would have been to erect a small saw mill at Olavakot and proposals to this end were made some time ago; but, owing to the uncertainty of

obtaining a market for the unknown soft woods and having regard to the general financial stringency, it was considered that it was not justifiable to incur more capital expenditure and it was decided to get experimental quantities of these woods sawn at Trichur to test the market. These unknown timbers constitute the larger portion of the forest crop in the Chenat Nair reserve and as their suitability for box making or other purposes has not yet been demonstrated by experiment on a commercial scale, we have had of necessity to limit exploitation to the timbers for which a market is assured. This perforce means that the machines employed for extraction cannot work economically and that the supervising and executive staff are working far below their capacity, the result being that the cost of extraction per unit is very considerably greater than it should be.

The result of the work in the Chenat Nair Exploitation Division was, as stated by the Conservator, a deficit of Rs. 52,500 without including interest or depreciation. Sixty-two thousand cubic feet of timber were supplied to the Kolar Gold Fields.

The appointment of a Forest utilization officer — a *liaison* officer between the department and the trade—was sanctioned during the year, but was given effect to only after its close.

FOREST PANCHAYATS.

25. The Special panchayat staff which was sanctioned with effect from 1st October 1922 has been working in 11 districts in the Presidency. From the Forest Panchayat officer's report it will be seen that about 586 out of 966 square miles of class V forests in these districts (60 per cent of the total) have been placed under Panchayat management. Thirty-eight new panchayats for the management of 68 square miles of class V forests in these districts have been formed during the year by the special panchayat staff. It is too early as yet to express an opinion on the working of the new organization, but considerable progress appears to have been made. A liberal policy has been adopted in fixing the assessment and the Forest Panchayat officer reports that the people in general are anxious to avail themselves of the opportunity to manage the V-class forests. The substitution of panchayat for departmental management has already effected some considerable financial saving. It is interesting to note that in many cases panchayats have agreed to the raising of grazing fees and the limitation of incidence, though it remains to be seen whether they will give effect to their good resolutions in these respects.

The question of increasing the number of Panchayat Inspectors and extending the scope of the operations of the special staff is now engaging my attention.

There were several instances in the III and IV Circles of the purchase of coupes by Co-operative Societies, one such society composed of Adi-Dravidas in North Vellore constructing a cart-track into the felling area.

The panchayat management of the class II forests in the Tiruvannamalai range under the forest village system has continued to work very satisfactorily. The Conservator, IV Circle, writes as follows:—

"The panchayatdars understand their duties and have not abused the powers given them under the condition of their agreements. There had however been one or two instances of misbehaviour in which suitable punishment was meted out to the defaulting panchayatdars. The protection in class II reserves has considerably improved under the system and as a result the number of forest offences has fallen during the year."

In this connexion the following extract from a diary of the South Vellore District Forest officer may not be without interest:—

"The old order of things changeth. Five years ago the Forest officer in these parts was approached by the ryots only with a grievance or a complaint against subordinates. To-day I was met a mile out of Tanipadi by practically the whole village with tom-toms and music. I was made to dismount from my gee and to head the procession till the rest-house was reached. Here I had to submit to the ordeal of being garlanded by the local panchayatdars and then listened to an oration in Tamil by one of the panchayatdars eulogising the Forest Department."

FINANCE.

26. The total gross revenue during the year amounted to Rs. 52·73 lakhs against Rs. 48·57 lakhs in the previous year. The expenditure debited to the Forest Department (including a loss of Rs. 20,472 by exchange transactions in England)

was Rs. 47·89 lakhs against Rs. 51·59 lakhs in the previous year. The result was a surplus of * Rs. 4·84 lakhs, as compared with a deficit of Rs. 3·72 lakhs in the previous year. The second, third, fourth and fifth circles yielded a surplus of Rs. ·99 lakh, Rs. 2,700, Rs. 4·80 lakhs and Rs. 4·72 lakhs respectively. In the first circle, there was a deficit of about Rs. 59,000 which included a lump sum of Rs. 40,000 under the head "Investments on Government buildings" debited against Ganjām. There was a deficit of Rs. 1·32 lakhs in VI Circle, the expenditure in which included the cost of the Forest Research Officer and of the Inspector of Live Stock (Rs. 33,000) as well as the cost (Rs. 17,000) of the reconstruction of buildings damaged in the Mappilla rebellion, while the expenditure in connexion with the Chenat Nayar operations amounted to Rs. 1·52 lakhs during the year. The chief cause of the large deficit in this circle is the slump in the timber market as pointed out by the Conservator on page 80 of the report.

	LAKHS.
	RS.
* Receipts	52·73
Expenditure	47·89
	4·84

The Forest College worked at a loss of Rs. 1·05 lakhs, general direction cost Rs. 2·03 lakhs and the special panchayat staff Rs. ·18 lakh.

GENERAL.

27. The year to a large extent was one of marking time partly owing to the necessity for economy and partly because a forward policy in respect of the development and exploitation of the valuable timber forests had to await the arrival of the recently appointed Chief Forest Engineer, Mr. Martin.

In furtherance of the policy of enlisting public opinion in measures of local forest conservancy two committees were appointed for the districts of Kurnool and Chittoor consisting of the local Forest officers, the Members of Legislative Council and other influential gentlemen and presided over by the Conservators of Forests, II and III Circles, respectively.

The Government have passed orders on the policy to be pursued regarding the Chentsus to the effect that efforts should be continued to reform the younger generation by means of education, that regular and suitable employment should be provided and that it is necessary to maintain due respect for law and order, to control the criminal propensities of the Chentsus and to afford adequate protection to the servants of Government, employed among them. Measures calculated to give effect to these recommendations are being taken. It has also been decided that all expenditure in connexion with the Chentsus should be met from the Forest budget. It is interesting to note that the construction of a well in one of the gudems has freed the local Chentsus from attacks of guinea worm.

FOREST COLLEGE.

28. Mr. C. C. Wilson was the Principal of the College throughout the year. Of the 29 students who passed out in 1923, four were from the Central Provinces, four from Bihar and Orissa, two from Rewa, two from Ceylon, one each from Patna, Hyderabad and Coorg, and fourteen from Madras (one Court of Wards student, twelve Government stipendiary students and one private student). Ten students were granted Honours certificates, an unprecedently large number, fourteen obtained Higher Standard certificates and five lower standard certificates. There were no failures.

VERNACULAR TRAINING SCHOOLS.

29. Three schools were held in the I, III and VI Circles. The results were satisfactory. Four students from Bihar and Orissa were trained at the school in the Ganjām district.

30. I have to record with great regret the death during the year of Mr. B. F. Rigold, Deputy Conservator of Forests. Mr. Rigold was an able and energetic officer who possessed a unique knowledge of the Upper Gōdāvari forests and his death was a severe loss to the Forest Department.

31. Mr. S. Cox, C.I.E., M.B.E., the first Chief Conservator of Forests in this Presidency, proceeded on long leave at the end of the year after a service of nearly four years as head of the department.

H. TIREMAN,
Acting Chief Conservator of Forests.

Order—No. 315, Development, dated 18th February 1924.

Recorded.

2. As the Chief Conservator points out the year under review was to a large extent one of marking time though not of stagnation. The reason for this was partly the continuing financial stringency but mainly the fact that the Government had under consideration a comprehensive scheme of forest exploitation on sound commercial lines. There can be no doubt that the true line of forest development in this Presidency lies in the exploitation by the Forest department as a commercial department on business lines of the great timber forests which are amongst the most valuable natural assets of the Province and in the transfer of other forest areas which are useful merely as grazing grounds or as sources of fuel supply to the management of forest panchayats or other suitable agency. The relationship of such agencies to the Forest Department is a question which the Government propose to examine at an early date.

3. In these circumstances, the working of the Forest panchayat system becomes of special importance. It is too early yet to pass any opinion on this but the progress made during the year under review and since its close provides sufficient justification for an optimistic view. The special panchayat staff which was sanctioned with effect from 1st October 1922 had at the end of the year worked in eleven districts of the Presidency and out of 966 square miles of class V forest in these districts 586 square miles had been placed under panchayat management. A liberal policy was adopted in fixing the assessment and the Government are glad to note that the ryots generally appeared anxious to avail themselves of the opportunity to manage this class of forests. There are indications that the increased knowledge of the difficulties of forest administration which the villager obtains when he has a voice in forest management is bringing home to him an understanding of the necessity for that administration.

4. A beginning was made during the year in introducing a system of commercial accounts in those undertakings of the Forest Department which appeared most suitable for conduct on strict business lines. Mr. C. F. George, an accounts officer lent by the Government of India, prepared reports on the Russellkonda saw-mill and the Chenat Nair exploitation scheme during the year and subsequently on the Goomsur forests, the Nilambur forests and the Mount Stuart working circle. The most important step which has yet been taken in regard to forest exploitation was not, however, taken until after the close of the year when a Chief Forest Engineer and a Logging Engineer were recruited from America.

5. It is much to be regretted that the operations of both of the two undertakings so far worked on commercial lines resulted in a loss. That on the Russellkonda saw-mill which amounted to Rs. 6,216-0-9 is attributed to the poor quality of timber brought to the mill; from 1,26,571 cubic feet of logs operated on only 41,318 cubic feet of saleable planks and scantlings were produced. The Chief Conservator reports that as a result of the experience gained during the early stages of the mill's working greater attention is now being paid to the necessity for more careful selection of the timber to be supplied to the mill. The information available since the close of the year goes to show that his anticipation that this will result in an improvement in out-turn and in profits in the current year bids fair to be realized. They also trust that the advent of the Chief Forest Engineer will completely alter the position of the exploitation operations in the Chenat Nair forests in which there was a deficit of Rs. 52,500 last year excluding interest and depreciation. Proposals for erecting a portable mill and box-making plant at Olavakkot to enable the produce of these forests to be placed in the market in the form in which it will command the most ready sale are under their consideration. The appointment of a Forest Utilization officer to act as liaison officer between the department and the trade and also of the well-known firm of Messrs. Howard Brothers, as sole agents to Government for the sale of Indian timber in Europe to which effect has recently been given should have valuable results.

6. Forest regeneration is no less important than forest exploitation. It is therefore satisfactory that the Chief Conservator is able to report a distinct advance during the year in the direction of systematic operations for the establishment of young crops of valuable species in almost all the principal forests of the Presidency.

7. The financial result of the year's working may be considered distinctly satisfactory, a deficit of Rs. 3·72 lakhs being converted into a surplus of Rs. 4·84 lakhs.

8. Two hundred and forty-nine square miles were finally settled under the Forest Act, 245 square miles being in the Upper Gōdāvari division. About 48 square miles were disforested to provide for cultivation chiefly in the districts of Bellary, Anantapur, Guntūr, Cuddapah, Chingleput, North Arcot and Salem. The net result was an increase of 202 square miles in the area of reserved forests which at end of the year was 19,064 square miles. Two hundred and four miles of roads were constructed at a cost of Rs. 1,57,605 and 1,242 miles were repaired at a cost of Rs. 95,504. The total expenditure on buildings was less than in 1921–22 being Rs. 1·62 lakhs now as compared with Rs. 2·52 lakhs in the previous year. Out of this a sum of Rs. 17,006 was spent on the restoration of buildings at Nilambur which were damaged during the Mappilla rebellion. With the more intensive exploitation of forests in areas such as Chenat Nayar, in which villages are few and far between, the necessity of providing quarters for the Forest staff is becoming urgent; but here again progress is limited by the amount of money available.

9. In paragraph 6 of his report the Chief Conservator states that, in order to meet the demands of the villagers for agricultural implements and small timber, simple working schemes have been prepared and sanctioned for certain areas in Kollegal and North and South Coimbatore. The Government would be glad to have more precise information as to the nature of these schemes and to know whether similar schemes have been prepared for and are in operation in other districts. If so, the way in which they are working should be reported.

10. The definite breakdown of the non-co-operation movement had an important re-action on forest protection. Lawlessness was much less in evidence, the change for the better being specially marked in the Guntūr district and offenders showed greater willingness to compound offences rather than to go to court. Of a total of 32,874 forest cases for the whole Presidency 23,711 were compounded and 7,180 taken to court as compared with 29,040 cases in 1921-22 of which 19,591 were compounded and 7,540 taken to court. The Chief Conservator explains that the increase in the number of offences detected is due to the greater efficiency of the protective staff. The Government are glad to note the improvement in efficiency but none the less consider that the increase in the number of offences is a matter for regret and trust that the extension of the forest panchayat system will effect a rapid reduction in forest crime.

11. The Government observe that the system of early burning though reported to be less expensive and more effective than the methods previously in vogue is not popular in some districts especially in Cuddapah. The system is at present in an experimental stage and the Government desire that its results should be carefully watched.

12. In commenting on the administration of the Forest department in the Nellore district, the Collector mentions that the only real complaint the ryots have against it is that many of the reserves are getting so choked with cactus and thorny bushes that grazing in them becomes impossible. The Chief Conservator is requested to investigate this complaint and to consider the possibility of granting general permission for the removal of thorny bushes in such reserves.

13. By the departure, towards the close of the year, on leave preparatory to retirement of Mr. S. Cox, the Chief Conservator of Forests, the Forest department lost an able officer of wide and varied experience who, in the course of his long connexion with it ending with four years as its Head, rendered valuable service to Government.

(By order of the Governor in Council)

F. Noyce,
Secretary to Government.

To the Chief Conservator of Forests.
,, Accountant-General.
,, Secretary to the Government of India, Department of Education, Health and Lands (with C.L.)
,, Inspector-General of Forests (with C.L.).
Editors' Table.

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on 01 February, 2020